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Clark University Bulletin

WORCESTER 10, MASSACHUSETTS

General Catalog 1963/64

Inquiries to the university should be directed as follows:

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General College Affairs:	Dr. Robert F. Campbell, Dean of the College
Admission to the College:	Dr. George H. Merriam, Director of Admissions
Undergraduate Financial Aid:	Mr. Thomas M. Dolan, College Financial Aid Officer
Graduate School Affairs:	Dr. Dwight E. Lee, Dean of the Graduate School
Admission to the Graduate School:	Dr. Dwight E. Lee, Dean of the Graduate School or Chairman of the Graduate Department concerned
Evening College Affairs:	Mr. Thomas J. Dolphin, Director
Summer School Affairs:	Mr. Thomas J. Dolphin, Director
Alumni Affairs:	Mr. Henry L. Signor, Alumni Secretary
Records and Transcripts:	Mrs. Lydia Colby, Registrar
Student Housing:	Undergraduate Men Dean Henry C. Borger, Jr. Undergraduate Women Dean M. Hazel Hughes Graduate Students Office of the Dean of the Graduate School
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University Telephone:	Area Code 617, Telephone: 791-6241

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Academic Calendar for 1963-64

1963	
Tuesday, September 10	Freshman orientation begins.
Monday, September 16	Upperclass registration.
Tuesday, September 17	First classes.
Saturday ~~Friday~~, October 12	Columbus Day. Not a holiday.
~~Thursday, October 31~~ Friday, November 1	Last day for receiving applications for admission to candidacy for the degree of Doctor of Philosophy in June, 1963.
Monday, November 11	Mid-semester reports due at Registrar's Office at 9 a.m. Veteran's Day. Not a holiday.
Wednesday, November 27	Beginning of Thanksgiving recess at close of classes.
Monday, December 2	Thanksgiving recess ends at 8:30 a.m.
Saturday, December 21	Beginning of Christmas recess at close of classes.
1964	
Monday, January 6	End of Christmas recess at 8:30 a.m.
Monday, January 13	No classes.
Tuesday, January 14	No classes.
Wednesday, January 15	Semester examinations begin.
Saturday, January 25	Mid-year recess begins at close of examinations.
Monday, February 3	Second semester registration.
Tuesday, February 4	Second semester classes begin.
Friday, February 7	Last day for receiving applications for admission to candidacy for the degrees of Master of Arts and Master of Arts in Education in June, 1963.
Saturday, February 22	Washington's Birthday. Not a holiday.
Monday, March 23	Mid-semester reports due at Registrar's Office at 9 a.m.
Saturday, March 28	Beginning of spring recess at close of classes.
Monday, April 6	End of spring recess at 8:30 a.m.
Monday, May 11	Dissertations for the degree of Doctor of Philosophy due at Registrar's Office at 9 a.m.
Monday, May 18	Theses for degrees of Master of Arts and Master of Arts in Education due at Registrar's Office at 9 a.m.
Monday, May 18	No classes.
Tuesday, May 19	No classes.
Wednesday, May 20	Semester examinations begin.
Saturday, May 30	Memorial Day. A holiday.
Sunday, June 7	Commencement Day.
Monday, September ~~16~~ 14	Registration Day for 1964-65

THE INSTITUTION

General Information

President:	Dr. Howard B. Jefferson
Corporate Name:	Trustees of Clark University
Incorporation:	1887
Function:	Independent university of liberal arts and business administration for men and women
Degrees Conferred:	Bachelor of Arts
	Bachelor of Science in Business Administration
	Bachelor of Science in General Studies
	Master of Arts
	Master of Arts in Education
	Master of Business Administration
	Doctor of Education
	Doctor of Philosophy
Enrollment:	1150
Faculty:	81
Endowment:	Book Value: $7,373,000
	Market Value: $11,363,000
Library:	245,000 volumes
	50,000 maps and charts

THE CLARK SCARLET

EXIT

History of the University

In February of each year, Clark University celebrates Founders' Day. This custom commemorates the beginning of the University chiefly through the efforts of two men, Jonas Gilman Clark, a sagacious merchant and businessman for whom the University is named, and Dr. Granville Stanley Hall, an educator of breadth and vision.

Mr. Clark, a native of Worcester environs, became wealthy during the California Gold Rush by supplying miners and others with manufactured goods. He increased his personal fortune through wise business dealings initiated after his return to the East at the end of the Civil War. He later returned to Worcester where he established a residence and became interested in civic affairs. It was during this period of his life that he decided to endow an institution of higher learning. His last years were largely devoted to the project. In this, he was assisted by his wife, Susan, and a group of prominent Worcester citizens, including George F. Hoar, a United States Senator from Massachusetts, and General Charles Devens.

In 1887, the Trustees of Clark University were incorporated. Construction started that year on a main building, known today as Jonas G. Clark Hall, and the Science Building. Dr. Hall was appointed the first president of the university. He had been a professor of philosophy, psychology, and education at The Johns Hopkins University and had already established his reputation as a vigorous and original scholar.

Recognizing the need for graduate institutions in the United States (there was at that time only one titled graduate school in the United States—The Johns Hopkins University), President Hall began the organization of an educational institution which would be solely concerned with graduate study and research. As a result, Clark University became the second graduate school established in the United States and for 13 years operated only as a graduate school.

This unusual educational idea attracted the attention of a number of brilliant and original scholars who, upon President Hall's urging, joined the Clark University faculty. They constituted one of the most outstanding communities of scholars this country had then seen. The first students entered the university in 1889 and its first graduates received diplomas in 1891. In 1900, Clark University was one of the 14 charter members of the Association of American Universities. The brilliance of both teachers and students soon established the scholarly reputation of the university.

While Mr. Clark supported President Hall's concept of graduate education, he was also interested in an undergraduate college for men and particularly those men who had limited financial resources. Accordingly, a codicil to his will, effective upon his death in 1900, provided for an undergraduate college with a three-year curriculum.

In compliance with the codicil, the trustees established Clark College. It was to have an administration and faculty distinct from those of the graduate school. Carroll Davidson Wright, then serving as the first United States Commissioner of Labor, was selected as the first president of Clark College. Rufus C. Bentley was named by the trustees as the first Dean of Clark College.

From its beginning, Clark College had an educational philosophy which was marked by seriousness of purpose and hard work. Inasmuch as the bachelor's degree was granted after three years of study, as opposed to the more common four-year curricula of the day, the student carried a heavy program of study. There were intramural contests rather than intercollegiate sports and extra-curricular activities were at a minimum. Though entrance requirements were informal, a high standard of performance was necessary to remain in college.

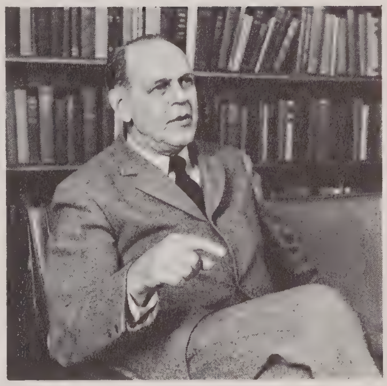
The educational program formulated for Clark College by President Wright and Dean Bentley complemented the already-established program of the graduate school. It was only a matter of time before the undergraduate college and

the graduate school, then associated but distinct, became one educational and administrative unit.

President Wright, who died in 1909, was succeeded by Edmund Clark Sanford, a professor of psychology in the graduate school. President Hall resigned in 1920 and President Sanford felt the time was ripe to unite the undergraduate college and graduate school. He resigned from the presidency to return to teaching and scholarship, leaving the field open for reorganization of the two entities under a single president. This the trustees decided to do and cast about for a man who would become the president of Clark University, which henceforth would include both the graduate and the undergraduate divisions.

In 1920, Walter Wallace Atwood, a professor of physiography at Harvard University, was selected by the trustees as president. During his tenure, there were significant changes in both the educational program and the physical plant. There was a reorganization of the graduate school and undergraduate college faculties and administrations into a single unit. The three-year curriculum leading to the bachelor of arts degree was increased to four years. The Graduate School of Geography was founded. Participation in intercollegiate activities, including athletics was encouraged. Additions to the physical plant included a men's dormitory, an athletic field, a gymnasium, a library tower and an auditorium. The latter was named Atwood Hall in honor of the president.

In 1941, the Division of Business Administration was established. Also, in 1941, Clark University became co-educational when the trustees voted to start the Women's College of the university.



President Atwood retired in 1946 after 26 years in office. His successor was Howard Bonar Jefferson, a professor of philosophy and Director of the School of Philosophy and Religion at Colgate University.

Under the vigorous leadership of Dr. Jefferson, the university has continued to take great strides. In 1953, a chapter of Phi Beta Kappa, the national liberal arts honor society, was established at Clark University. Courses in mathematics leading to the master's degree were re-established.

In 1953, The Evening College of Clark University was organized as an institution for adult learning. It provides university education for adults and offers an opportunity for persons to earn a bachelor's degree exclusively by evening study. In addition, it frequently organizes non-credit courses, institutes and seminars as a community service. In 1962, a program leading to the degree of Master of Business Administration was started by The Evening College.

In 1958, the Institute of Human Development was established as an adjunct of the Department of Psychology. A center of psychological study, its purpose is to develop an all-inclusive concept of human development.

During Dr. Jefferson's tenure, the university has almost doubled its physical plant. A new chemistry laboratory was opened in September, 1958. In the following year, two new dormitories and a student center were opened. The student center was named in honor of Dr. Jefferson. In addition, the university has purchased a number of buildings for use as dormitories, faculty apartments and a conference center.

Doctoral programs in chemical-physics and education were inaugurated in 1961 and 1962, respectively. A doctoral program in biology was re-established in 1962 and the Evening College began a master's program in business administration. Geology became a major in 1963 and a major in music is planned for 1964.

Today, one can receive instruction leading to the degree of Doctor of Philosophy in biology, chemistry, chemical physics, economics, geography, history and international relations, and psychology. A Doctor of Education degree is also offered. Master's degrees can be obtained in these fields and also in business administration, government, mathematics, physics, and sociology. The undergraduate may take courses in these fields and, in addition, in classics, English, fine arts, geology, German, music, philosophy, and Romance languages.

Worcester and the University

When plans for the new university were taking shape in Mr. Clark's mind, he enlisted the aid of a group of far-sighted and influential Worcester citizens from whom, later, the majority of his original board of trustees was chosen. In this was set a pattern for cooperation between the university and the community which has persisted throughout the history of the institution.

The intellectual life of the city has been strengthened by the contributions of the faculty and of distinguished guests whom the university has brought to Worcester. Members of the staff have served local institutions both public and private in many ways, and the Clark Fine Arts series has helped to enrich the cultural life of Worcester.

The college has opened the door to higher education for hundreds to whom the opportunity would have been denied if they had been forced to seek it elsewhere. The Graduate School has aided more gifted students to proceed to the highest levels of intellectual endeavor. Particularly noteworthy has been the service to teachers in the public school system. Finally, the Evening College has greatly widened educational opportunities in the community.

In turn, the university has benefited by the support, both financial and intangible, which it has received from the citizens of Worcester. The interchange of services and ideas with the staffs of other Worcester institutions and the opportunity to use their libraries on a reciprocal basis have been invaluable.

The university is conscious that it is a part of the community and that, as such, it has both obligations and benefits. Its steadfast purpose is to strengthen the bonds of mutual interdependence and cooperation.

The Campus

UNIVERSITY CAMPUS

Clark is an urban institution situated close to the heart of Worcester. Its educational and administrative activities are located on a compact campus near a major city park and city transportation lines. On adjacent properties facing the campus are University dormitories, apartments, infirmary and the residences of the President and Dean of Students. Clay tennis courts and a running track are nearby as well as a larger athletic field, used for soccer and baseball. A number of other University residences and centers are located near campus. In addition, the University owns a tract of nearly 20 acres, known as the Hadwen Arboretum, a few miles from campus. Nearby colleges include Worcester Polytechnic Institute, Assumption College and the College of the Holy Cross. The famed Worcester Art Museum is also located nearby. The first building erected on the campus was Jonas G.

CLARK HALL

Clark Hall, a four-story granite and brick structure in the center of the campus. It houses the offices of the Deans, Registrar, Bursar and Treasurer as well as those of the Evening College, Summer School, Placement Office, Psychological Clinic and Admissions Office. In addition, it contains many of the offices and classrooms of the departments of instruction, the Women's Gymnasium, Language Laboratory, and the Institute of Human Development—an adjunct of the Psychology Department. Clark's

SCIENCE BUILDING

second oldest building is the Science Building, site of experimentation by Dr. Robert H. Goddard, "father of the space age," and Dr. Albert A. Michelson, America's first Nobel Prize win-

ner. One wing of the building and a portion of its midsection has been remodeled to provide new research and instruction facilities for the Biology Department. The opposite wing of the same building also has undergone a less intensive remodeling for the Physics Department. Between these two oldest Clark buildings is one of its newest—Jeppson Laboratory. Completed in 1958, this building has completely modern research and instruction facilities for the Chemistry Department. It contains Johnson Hall, a multipurpose lecture hall seating 174 persons, and Kraus Library, specializing in chemical periodicals. Standing at the opposite corner of the main campus is the University Library, which, besides its large book collection, has one of the most extensive geographical map and chart collections in the United States. The building also has a music room and language center with appropriate records and literature. Attached to the north end of the University Library is the Library Tower, built in 1939 to provide space for the growing library collection. An elevator offers access to eight levels of stacks in the tower. The lower portion of the tower contains the stage of Atwood Hall, an 800-seat auditorium used for student assemblies, lectures, concerts and other University functions. Atwood Hall also contains the Blue Room for smaller lectures and meetings, and the offices and classrooms of the Fine Arts Department. Site of America's first and only Graduate School of Geography, this building also contains the offices of the President, Vice President and other administrative officers. It also contains the editorial offices of *Economic Geography,* a quarterly publication of Clark University. The Music Department is located in newly-remodeled facilities in Estabrook Hall containing practice and seminar rooms as well as offices of instruction. Estabrook Hall also has dormitory rooms for male students and offices for student organizations. Most male students living on campus are quartered in the Men's Dormitory. Completed in 1959, this fire-proof dormitory has rooms for 201 men with formal lounges and recreation room for their leisure

JEPPSON LABORATORY

UNIVERSITY LIBRARY

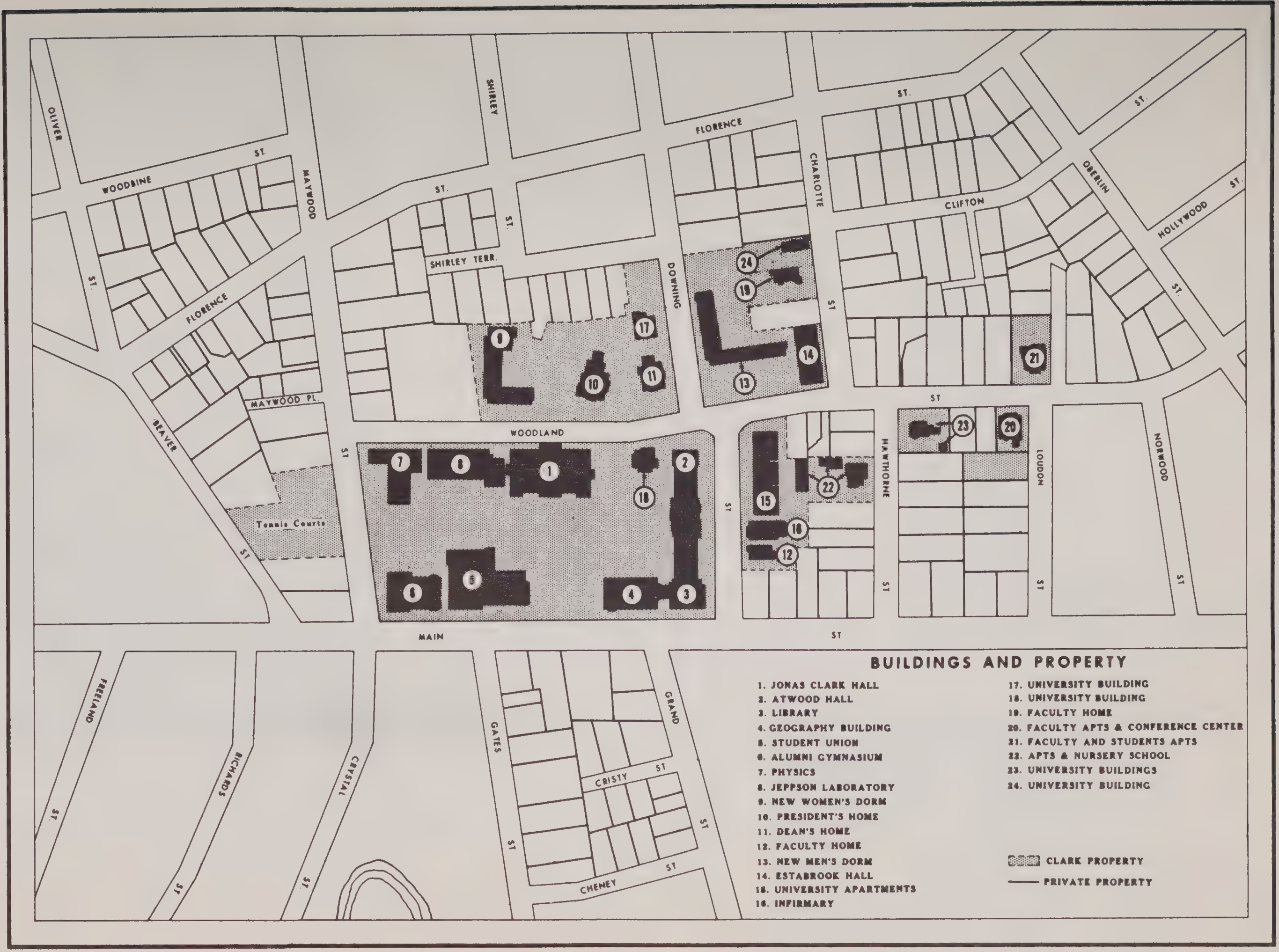
LIBRARY TOWER

ATWOOD HALL

GEOGRAPHY BUILDING

ESTABROOK HALL

MEN'S DORMITORY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BUILDINGS AND PROPERTY

1. JONAS CLARK HALL
2. ATWOOD HALL
3. LIBRARY
4. GEOGRAPHY BUILDING
5. STUDENT UNION
6. ALUMNI GYMNASIUM
7. PHYSICS
8. JEPPSON LABORATORY
9. NEW WOMEN'S DORM
10. PRESIDENT'S HOME
11. DEAN'S HOME
12. FACULTY HOME
13. NEW MEN'S DORM
14. ESTABROOK HALL
15. UNIVERSITY APARTMENTS
16. INFIRMARY
17. UNIVERSITY BUILDING
18. UNIVERSITY BUILDING
19. FACULTY HOME
20. FACULTY APTS & CONFERENCE CENTER
21. FACULTY AND STUDENTS APTS
22. APTS & NURSERY SCHOOL
23. UNIVERSITY BUILDINGS
24. UNIVERSITY BUILDING

▨ CLARK PROPERTY

— PRIVATE PROPERTY

BULLOCK HALL

time. Bullock Hall, a women's dormitory also completed in 1959, is similar in design to the Men's Dormitory. It houses 137 women students and also has formal lounges and recreation rooms. The Alumni Gymnasium, one of Clark's pre-war buildings, possesses a gymnasium seating 800 persons and shower and locker facilities for intramural and intercollegiate athletics. The offices of the Department of Physical Education are there. On the second floor is the Alumni Office and Alumni Lounge, a comfortable meeting room for University organizations. Another newly-constructed building is the Student Center—Jefferson Hall. Opened in 1959, Jefferson Hall contains the University Dining Hall and snack bar, faculty and student lounges, a recreation room, student mail boxes and the University Bookstore. Another dormitory unit is the University Apartments, purchased in 1959. The building is used for women undergraduates and, in the past, it has contained apartments for married faculty and staff members. Near the main campus is the Conference Center, originally the site of the Institute of Liberal Studies for Executives but now used for university meetings and functions. The University purchased a large private home in 1961 and has converted it into a Graduate House, a dormitory for graduate students. This contains living quarters for graduate students as well as a comfortable lounge and kitchen facilities. A number of other private homes near the campus have been purchased in recent years to provide housing for married graduate students and faculty members.

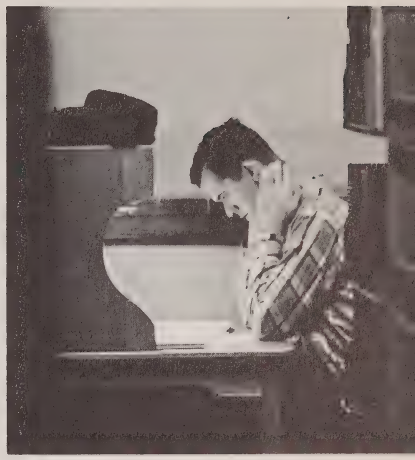
ALUMNI GYMNASIUM

JEFFERSON HALL

UNIVERSITY APARTMENTS

CONFERENCE CENTER

GRADUATE HOUSE



The Library

Tilton M. Barron, *Librarian*
Marion Henderson, *Reference Librarian*
Elizabeth Hassinger, *Catalog Librarian*
Valerie Lein, *Circulation Librarian*

The Clark University Library contains over 245,000 volumes and some 50,000 maps and charts. The major part of the collection is centrally housed, and an open shelf system fosters free access to books and periodicals for student and scholar. Chemistry periodicals are available for reference at the Kraus Library—Jeppson Laboratory. To stimulate reading skill and to acquaint the student with the contemporary culture of foreign lands, a collection of foreign newspapers and periodicals is maintained in a Language Center, an adjunct to the modern electronic language laboratory.

The collection reflects the history and growth of the University. The combined scholar's library of the early graduate school and the undergraduate library of Clark College have been developed through the years to serve the academic needs of Clark University. The richest holdings are in the fields in which graduate work is offered—geography, psychology, biology, chemistry, physics, mathematics, economics, and history and international relations. More characteristically undergraduate in content are the collections dealing with music, fine arts, language, literature, religion, and philosophy. The Library pays particular attention to major bibliographical and reference tools, and currently receives over 1100 periodicals.

A music library of recordings contains a collection of classical and standard musical works. There is also a listening room in the building.

The Clark University Library coordinates its acquisition of new material, and exchanges material, with other libraries in the Worcester area.

Planning is currently underway for a new library to house half-a-million volumes and to accommodate 750 readers.

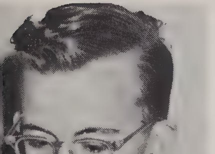
The University Looks to the Future

At a time when higher education is confronted with unprecedented challenges in meeting the nation's needs, Clark University faces the future with comprehensive, thoughtful plans and an ambitious program for their achievement. In establishing ten-year objectives for the University, trustees, faculty, alumni and friends have been aware both of Clark's unusual history and traditions, and the critical national need for expanded educational services and facilities. Reflecting these considerations, Clark's goal is to hold steadfast to its traditions as a university concerned with scholarship of the highest possible order, and offering graduate work to and beyond the doctorate in selected fields of study. Too, the University aims to preserve—and enhance—the unusually close relationship which exists between undergraduate and graduate education at Clark, thus maintaining one of its most unique features: an intellectual atmosphere which combines the spirit of creative discovery found in the large university with the intimate, personal relationships which are found in the small liberal arts college. Finally, while continuing to foster the values of smallness in every possible way, the University will undertake planned and limited expansion to an enrollment of not more than 1500 students by 1972, the year in which it will celebrate the 85th anniversary of the granting of its charter.

For the achievement of these goals, the trustees have established *The Clark Program,* a comprehensive ten-year development effort whose objective is to secure nearly $21 million in new resources by 1972. Of the total sought, twelve million will be required to support endowed professorships, faculty salaries, scholarships, fellowships and special programs to enrich the educational experience at Clark. The remaining $8,800,000 will be utilized to realize the first phase of Clark's *Campus of Tomorrow,* a long-range plan for total campus development.

Since the formal announcement of *The Clark Program* in May, 1962, rapid progress has been made toward its goals. Within 14 months, a total of $4,200,000 in new resources was secured, the major portion of an entire city block was acquired and construction was begun upon three new buildings in the residential quadrangle at an estimated cost of $2,850,000. In addition, during the summer months of 1963, a new central heating plant was installed and major alterations were completed in Jefferson Hall.

The Clark Program is the largest undertaking of its kind in the University's history—a program rooted in conviction about the importance of what higher education means at Clark, and pursued with confidence that success will be achieved.



THE UNDERGRADUATE COLLEGES

CLARK COLLEGE Clark College, the undergraduate men's division, and the Women's College constitute the primary undergraduate divisions of the University. Educationally they operate as a unit, and admission and degree requirements are identical in the two colleges. Both offer academic programs in the liberal arts and in business administration.

LIBERAL ARTS The liberal arts program provides for breadth of knowledge and understanding together with the intellectual discipline resulting from concentration in a selected field of special interest. The program, leading to the degree of Bachelor of Arts, possesses a large degree of flexibility permitting adaptation to a wide variety of individual interests.

BUSINESS ADMINISTRATION Fundamental skills as well as broad professional training are offered through the business administration program. Breadth is assured by prescribing required courses in basic subjects and selected functional areas of business activity. Professional specialization is assured by requiring the student to select an area of concentration. Cultural background is available to the student by allowing him to freely elect part of his program from courses in the arts and sciences. The areas of concentration are accounting, economics, finance, marketing, management, and personnel administration. The program leads to the degree of Bachelor of Science in Business Administration.

Admission

ADMISSION

Clark University welcomes applications for admission from young men and women of scholastic ability and seriousness of purpose who are prepared to join wholeheartedly in the life of an intellectual community. The selection is on a competitive basis and all applicants are subject to final approval by the Admissions Committee.

CLASSIFICATION OF STUDENTS

The University accepts four classes of students:

Undergraduates: Candidates for the degree of Bachelor of Arts or Bachelor of Science in Business Administration in the undergraduate colleges.

Graduate Students: Candidates for the degree of Master of Arts, Master of Arts in Education, Doctor of Education or Doctor of Philosophy. For further information, see the section entitled "Graduate School."

Special Students: Persons, not prospective degree candidates, who wish to take advantage of the opportunities for study provided by the University and who give satisfactory evidence of adequate preparation for the work which they wish to undertake.

Summer School and Evening College Students: Persons who may wish to be candidates for a degree or who may wish to take advantage of the opportunities for study provided by the Summer School or The Evening College.

Auditors: In addition to the above four classes of students, auditors, registered for attendance but not for credit, may be admitted at the discretion of the administrative officers of the University. They pay the regular tuition rates but are not enrolled as students and do not pay the matriculation fee.

WITHDRAWAL

The University reserves the right to require the withdrawal at any time of any student or auditor whose record in either conduct or scholarship fails to meet the expectations implied by his admission.

APPLICATIONS

Applications to the Colleges should be prepared carefully and must be accompanied by the applicant's scholastic record and a non-returnable application fee in order that the application receive consideration. Formal application should be made at the earliest possible date during the applicant's final year in secondary school.

REQUIREMENTS

The completion of a four-year high school program or its equivalent, including 16 acceptable units of credit, is normally required for admission to the freshman class. The term "unit" means a course of study in one subject taken through a school year. An applicant must furnish official records from all preparatory schools attended.

Subject-Matter Requirements: The subject-matter requirements for admission to the freshman class are as follows:

Required Subjects, 8 units

English	4 units
Mathematics (algebra and geometry)	2 units
(Applicants expecting to specialize in science are advised to present at least three units of mathematics.)	
Foreign Language (in one language)	2 units

(In view of the language requirement for the A.B. degree, it is strongly urged that an applicant present more than two units in one foreign language.)

Restricted Electives, 5 or more units in addition to the 8 units of required subjects

Mathematics	1 or 2 units
Foreign Language	1 to 4 units
(A single "beginning unit" in a foreign language is not acceptable.)	
Social Studies (history, government, civics, etc.)	1 to 3 units
Natural Sciences (physics, chemistry, etc.)	1 to 3 units

Free Electives, not more than 4 units

Subjects recognized by the applicant's preparatory school in its regular program, at the discretion of the Admissions Committee.

College Entrance Examination Board: All applicants must take the Scholastic Aptitude Test of the College Entrance Examination Board. This test may be taken in December, January or March of the applicant's senior year in secondary school. In addition, applicants are required to submit a writing sample taken under controlled conditions. This requirement may be met by participation in the College Entrance Examination Board's December, January or March administration of such a controlled writing sample. Applicants are also required to take the Achievement Tests of the College Entrance Examination Board in Mathematics and Foreign Languages in March of the applicant's senior year.

A bulletin of information concerning these examinations may be obtained from the College Entrance Examination Board. In the East, write to Post Office Box 592, Princeton, N.J.; in the Far West, write to Post Office Box 9896, Los Feliz Station, Los Angeles 27, Cal.

Scholastic Quality Requirements: In addition to the Scholastic Aptitude Test of the College Entrance Examination Board, certification by the principal of the student's secondary school in at least 14 of the 16 required units is normally necessary. An exception may be made if the applicant ranks in the upper quarter of the class with which he graduated.

ADMISSION WITH ADVANCED STANDING

An applicant for admission who has attended another institution of college grade is required to submit a letter of honorable dismissal, a complete transcript of his academic record at the institution last attended, his high school transcript and such other information as the Admissions Committee may request. No application can be considered for admission until all transcripts have been received. Tentative evaluation of credits for courses of college grade completed elsewhere will be made at the time of a student's first registration at Clark and will be used in planning his course program and in classifying him provisionally as a freshman, sophomore, junior or senior.

Definite recording of the credit tentatively evaluated will be made only if (a) a satisfactory semester record—no more than one D in a four- or five-course program—is attained in the first or second semester of residence; and (b) the records of the student's first two semesters are both non-probationary. When a transcript has been accepted by the student concerned, no further revision of the amount of credit will be considered.

Transfer students in the business administration program should note that (1) Business English and Business Mathematics are not accepted for credit toward the degree; (2) the University reserves the right to examine a student in any course required for the degree which is offered for transfer credit; (3) a maximum of two year-courses in one area of concentration may be accepted for transfer credit without further confirmation, and more than two courses in one area will not be accepted for transfer credit until a confirming course at a higher level has been completed at Clark with a grade of C-minus or better; (4) in no case, will transfer credit be allowed for more than four courses in any one area; and (5) in any subject in which a full year-course is required at Clark, the University may deny the transfer of credit for a half-year course in that subject.

A graduate of the three-year course of the School of the Worcester Art Museum may be admitted as a candidate for the degree of Bachelor of Arts with the rank of junior in the college. In such cases the usual admission requirements must be met and the general subject-matter requirements for the degree must be satisfied.

ADMISSION DEPOSIT

When a student's application is complete and he has been tendered formal admission to Clark University, he will be required to indicate his acceptance of the offer of admission by making an admission deposit to hold a place for the student in the incoming class. This deposit is credited toward the charges for the first semester. The deposit is forfeited in case the student does not enroll for the specified semester. This applies to all students except graduate and special students. The deposit may also be used to reserve dormitory space.

ADMISSION OF SPECIAL STUDENTS

Applicants for admission as special students should address their inquiries to the Dean of Students (men) or Dean of Women and they should be prepared to supply evidence of qualification for the study they wish to undertake.

ADMISSION OF FOREIGN STUDENTS

Application from foreign students will not be considered if received after May 1. Foreign students whose native tongue is not English must be able to satisfy the university requirements for proficiency in the English language. Every foreign student must have medical insurance, preferably that of the Institute of International Education.

The Academic Programs

GROUPS

Course credit may be obtained at the undergraduate level in the following fields of instruction which, for administrative purposes, are known as "groups."

Group A. Science and Mathematics: Biology, chemistry, experimental psychology, geology, mathematics and physics.

Group B. Social Sciences: Economics, education, geography, government, history, international relations, philosophy, psychology and sociology.

Group C. Language and Literature: Greek, Latin, English, French, German, Spanish and an interdepartmental course in language and literature.

Group D. Fine Arts: Art and music.

MAJORS

A student may major in biology, business administration, chemistry, classics, economics, English, geography, geology, German, government, history, mathematics, philosophy, physics, psychology, sociology or Romance languages. A major in music will be offered to students entering the freshman class in September, 1964. An interdepartmental major is offered in international relations. A major in fine arts is offered through a program given in cooperation by Clark and the School of the Worcester Art Museum. Courses in education are offered but a major is not available.

GENERAL EDUCATION

Many courses at Clark offer the student an opportunity to obtain a core of information and of ideas which will be possessed in common with many of his contemporaries and to stimulate intelligent and critical interest in fields of learning where he has no expectation of attaining professional competence. In choosing his program, the undergraduate is urged to supplement his major with courses of this character.

STUDENT PROGRAMS

The undergraduate normally carries a program of five courses throughout the academic year. In addition, he must meet the requirement for physical education. In general, a course meets three times weekly. Laboratory periods are usually three hours long. Students should consult their faculty adviser or major department when questions of course or program selection arise.

INDUCTION

Freshmen must attend an induction program held several days before the academic year begins. After meeting initially at the University, freshmen usually spend the remainder of the induction program at a camp or hotel.

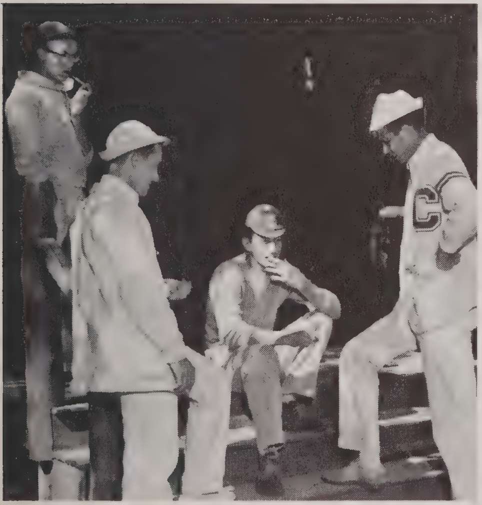
During the induction program, freshmen have an opportunity to become acquainted with their classmates as well as members of the University faculty and staff. They will also meet upperclassmen and alumni. Placement examinations and other tests will be given. Freshmen will attend individual and group conferences and will register for a program of studies.

A modified induction program is held for transfer students entering the upper classes. These students do not attend the induction programs held off-campus but they do report early to the University for testing, orientation and registration.

FACULTY ADVISERS A freshman is assigned a faculty member who advises the student on a program of courses and on other matters. After the freshman year, students are encouraged to select an adviser of their own choosing. A change of advisers may be made on formal request addressed to the appropriate dean.

The adviser assists the student in choosing his program of studies and is usually available for consultation on any matter which the student may wish to discuss with him.

REGISTRATION Each student is required to register for a detailed program of courses at the beginning of every semester. The student will be given notice in advance of the dates on which registration is re-



quired. Failure to register within the announced period is penalized by a late registration fee.

Changes in registration may be made, with the approval of the student's adviser, for a limited time after the end of the registration period. Later changes involve a formal petition to the College Board.

FRESHMAN SEMINAR

During the first several weeks of the academic year, freshmen will meet with faculty members in small groups to discuss significant books which they have been asked to read in the previous summer.

FRESHMAN PROGRAM

A freshman must choose his entire program from courses which are open to freshmen. All freshmen are required to take English 11, a Group A course, a Group B course and an elective. Candidates for the A.B. degree must also take a course in a foreign language. Candidates for the B.S. in B.A. degree must take Business Administration 100, *Principles of Accounting.*

Students who expect to major in Group A and students who are candidates for the B.S. in B.A. degree must elect Mathematics 11 or, if qualified, Mathematics 12.

Students especially qualified by preparation, performance and interest may elect a second laboratory science in place of a Group B course.

ADVANCED PLACEMENT Placement in advanced courses is determined by individual performance on special departmental placement examinations or, in some instances, on the Advanced Placement and Achievement Tests of the College Entrance Examination Board. College credit for certain courses completed in high school may also be granted toward the bachelor's degrees on the basis of the College Entrance Examination Board Advanced Placement Tests.

SOPHOMORE PROGRAMS A sophomore must give priority in his program to any general degree requirements which remain to be satisfied and should provide for an introduction to the field or subject in which a major is chosen. The remaining elective choices provide the student opportunity to broaden the range of his interests.

Tentative selection of a major is required of A.B. degree candidates at the time of registration for the sophomore year. Candidates for the B.S. in B.A. degree must select an area of concentration at the same time.

Sophomores may elect any course designated by a number beginning with the numeral 1, indicating the course is primarily for undergraduates. They are not admitted to courses designated by a number beginning with the numeral 2, except by permission of the College Board.

JUNIOR-SENIOR PROGRAMS Juniors and seniors should plan their courses carefully and in consultation with their faculty advisers. However, these students may elect any courses designated by numbers beginning with 1 or 2, indicating courses which are primarily for undergraduates or for advanced undergraduates and graduate students. The selection by juniors and seniors of these courses is subject to any conditions stated in the course description.

Under special conditions and with the approval of the College Board and the Dean of the Graduate School in each case, seniors who rank in the upper third of their class may be admitted to courses designated by numbers beginning with the numeral 3, indicating courses which are primarily for graduate students.

ACCELERATED PROGRAMS

At least three years of college study in residence is required for a bachelor's degree. A student may earn the degree in this minimum time, or in three and one-half years, provided he is prepared to make the additional effort which is required and is able to maintain the required level of scholarship.

Such accelerated programs are possible through a combination of six-course programs during the regular academic year and attendance at summer schools. Credit toward a degree for study at a summer school is granted only when it is officially recognized in advance in each individual case.

To complete the bachelor's degree requirements in three years, the student must carry a six-course program through all three years and attend two six-week summer schools. Only students of exceptional ability and in excellent physical health are advised to undertake such a program.

To complete the bachelor's degree requirements in three and one-half years, the student must accumulate in that time credit for two and one-half courses in addition to a regular program. The student can accomplish this without attending summer school if he carries a six-course program through two and one-half years. More commonly, the student will accomplish this by attending two summer schools and carrying a six-course program for one semester or by attending three summer schools.

SIX-COURSE PROGRAMS

A student whose average grade for any semester is C+ or better can register for a program of six courses for the following semester.

A senior whose graduation within the academic year depends on the completion of a six-course program during that year may register for a six-course program if his average grade for the preceding semester is C– or better.

The tuition charges for a six-course program are based on a "per course" rate. See the section listing tuition and other charges.

WASHINGTON SEMESTER PROGRAM

Clark participates in the Washington Semester program of the American University in Washington, D. C. Under the program, a small number of superior students may be nominated to attend the program, usually in the junior year, studying United States government in the nation's capital. Though any student may be interested in the program, the opportunity should be particularly attractive to students majoring in government, international relations, history, economics or sociology. Full credit is given for the program toward the degree at Clark. Inquiry and application should be made to the chairman of the Department of History, Government and International Relations.

JUNIOR YEAR ABROAD

In cooperation with such organizations as Academic Year Abroad, Institute of European Studies and Scandinavian Seminar, Clark offers its students the opportunity of spending their junior year abroad. Programs of foreign study involving academic credit must have prior approval of the College Board.

PARTIAL PROGRAMS

Under special circumstances, programs of fewer than five courses may be permitted. A student whose program is fewer than four courses is designated as a part-time student. Part-time students are excused from the requirement in physical education. Tuition charges for the program of a part-time student are based on a "per course" rate. See the section listing tuition and other charges.

SPECIAL STUDENTS

Special students register for such programs as they agree upon in consultation with the instructors concerned. They are excused from the requirement in physical education. Tuition charges are based on a "per course" rate. See the section listing tuition and other charges.

PRE-PROFESSIONAL PROGRAMS

One function of the undergraduate colleges is to prepare students who intend to enter a professional school or take graduate study. Students entering Clark may gain this basic preparation through the selection of the appropriate major. A student planning a professional career should consult with his adviser as early as possible in his college career to best shape an undergraduate program.

Pre-medical, pre-dental or pre-nursing students can satisfy preprofessional requirements for entrance into a medical, dental or nursing school by taking necessary basic courses in biology, chemistry or physics. In the case of teaching, Clark offers courses necessary for state certification. It also offers a graduate program in education. For information concerning teaching requirements, consult the Education Department section under the listing of "Departments and Courses."

Pre-law students are not limited to the selection of a particular major or a fixed group of studies. Some attention to the social sciences is generally favored but not mandatory. Undergraduates headed for law schools are advised to seek a broad liberal arts education. Frederick W. Killian, associate professor of sociology and a lawyer, serves as Clark's adviser to students planning to attend law schools and is available for consultation concerning law schools, scholarships and undergraduate programs.

Requirements for a Bachelor's Degree

GENERAL REQUIREMENTS

A student in good standing who completes the requirements for either the degree of Bachelor of Arts or the degree of Bachelor of Science in Business Administration will be recommended for the appropriate degree unless, in the judgment of the College Board, there is cause for withholding the recommendation.

Residence: A student must be in residence at least three academic years. At least one full year, usually the last year before the degree is conferred, must be spent at the University. Five one-year courses must be satisfactorily completed for each year in residence.

Course Requirements: All college regulations concerned with credit toward a degree are expressed in terms of courses. A course as a unit of credit normally implies three or four class meetings or laboratory exercises per week throughout two semesters and constitutes one-fifth of a student's normal program. If fractional courses are offered, these will be combined in computing total course credits.

Undergraduates admitted to courses primarily designed for graduate students and designated by numbers beginning with the numeral 3 receive one-half course credit per semester irrespective of the number of weekly class meetings. Twenty full courses at a satisfactory level of scholarship are required for graduation.

Physical Education: A student must complete two years of physical education, two hours per week. A fee of $50 will be charged to any student who seeks to make up an *unexcused* failure in the two-year men's physical education requirement. A proportionate fee will be charged to women students who seek to make up an *unexcused* failure in any portion of the women's physical education requirements.

SPECIAL REQUIREMENTS

In addition to the general requirements for a bachelor's degree, there are specific requirements for the degree of Bachelor of Arts and for the degree of Bachelor of Science in Business Administration.

SPECIAL REQUIREMENTS BACHELOR OF ARTS

Major: A departmental major consists of seven courses designated by the department for this purpose. Four or five of these must be courses in the major subject; the remaining courses must be in fields of study closely related to the major subject. A grade of higher than C– is required in at least 11 semester grades involved in the completion of an acceptable major.

Mathematics 11 or 12 is a freshman year requirement for all students intending to major in Group A–Science and Mathematics.

Interdepartmental Major: An interdepartmental major includes eight or more courses chosen with regard to related content and purposes in fields which cross departmental boundaries. One such program is now available.

Group A–Science and Mathematics: The student must take two courses, one in each of two different fields. The two courses may not be distributed between more than two fields of study. One of them must be a laboratory science. Courses in the history of the sciences are not counted toward the fulfillment of this requirement.

Group B—Social Science: The student must take two courses, one in each of two different fields. The two courses may not be distributed between more than two fields of study.

Foreign Language: The student must take a course in a foreign language at or beyond the third-year college level. However, freshmen whose placement tests show them ready for such a third-year course may fulfill this requirement by taking two years of a second foreign language. Language study must begin in the freshman year. A student whose previous education has been in a language other than English may be relieved of the foreign language requirement upon the successful completion of the freshman English course.

English: The English requirement includes one and one-half courses, English 11 in the freshman year and an additional half-course. All students are required to maintain satisfactory proficiency in English.

Fine Arts: A half-course in fine arts or music or a year-course in a foreign civilization must be completed.

SPECIAL REQUIREMENTS BACHELOR OF SCIENCE IN BUSINESS ADMINISTRATION

Mathematics: One course in mathematics is required.

Laboratory Science: One course in a laboratory science is required.

English: Two courses are required in English of which a half-course may be Public Speaking.

Sociology, Psychology or Government: Three courses are required in not more than two fields.

Economics: One and one-half course in economics is required.

Business Courses: Requirements include one course in accounting, one-half course in marketing, one-half course in management, one course in statistics, one-half course in Corporation Finance, and one course in Analysis of Business Problems.

Concentration: In the fields of accounting, economics and finance, management or marketing: in addition to the courses already required, the student's program shall include no less than two or more than three courses in any one field, except that the total courses in any one field shall not be less than three. For this purpose, no more than two half-courses with a grade of less than C— are acceptable.

Elective Courses: One and one-half of the remaining courses must be in the liberal arts (non-business) area.

The special requirements listed here for the degree of Bachelor of Science in Business Administration are binding upon the class entering in September, 1961. Students currently enrolled in the program or those entering with advanced standing should consult their adviser or the director of the division regarding the requirements to be met by them.

Academic Regulations

GRADES

Grades are reported for each student at the end of each semester. The grades are A–excellent; B–good; C–average; D–poor; and F–failure. The modifying symbols, plus and minus, are used with each of these letter grades, except F, giving 12 levels of passing grades. A report of incomplete is permitted only when sickness or some other unavoidable circumstance prevents the completion of a course.

A record of failure in a course is final and not subject to change on the basis of any subsequent performance of the student who is involved. Credit for a course in which a failure has been reported may be secured only by repeating the course and earning a passing grade. A record of incomplete incurred in the first semester must be made up by the end of the academic year;

if incurred in the second semester or summer term, it must be made up by midsemester of the following fall. If a course is not completed within the specified time, the record of incomplete is changed to one of failure.

SCHOLARSHIP STANDARDS

Courses with the grades of D+, D, or D– may not be counted toward a bachelor's degree beyond one-quarter of the total credit required, i.e., not more than five such courses or their equivalent in fractional courses may be counted. In consideration of this regulation only grades received and credit earned at Clark are considered.

CLASSIFICATION OF STUDENTS

A student continues to be listed in the class with which he entered college until the end of the third, or junior, year. At this time only those students who have credit for at least 14 courses with a minimum of 18 semester grades of C– or better are promoted to the senior class.

PROBATION

Students with unsatisfactory grades are placed on probation. They will usually be required to withdraw from the College if they have two consecutive or three non-consecutive probationary records.

EXAMINATIONS

Final examinations are regularly given at the end of each semester in all college courses. Approximately two weeks are set aside for each examination period and an attempt is made to distribute the examinations for any individual student throughout this period. Absence from a final examination, except for the most compelling reasons, usually results in a record of failure in the course. Other examinations and tests may be given at any time during the semester at the convenience of the instructors.

ATTENDANCE

Students are expected to be present on the first day of each term and to continue in attendance from day to day until the end of the term. Students are expected to be consistently regular in attendance.

Honors, Awards and Prizes

ANNUAL HONORS First honors or second honors are awarded at the end of each year to members of the freshman, sophomore and junior classes who have, in the judgment of the College Board, distinguished themselves by their scholarship during the year.

COURSE HONORS The bachelor's degree may be awarded *cum laude, magna cum laude* and *summa cum laude* to members of each graduating class whose records, in the judgment of the College Board, warrant this distinction.

DEPARTMENTAL HONORS A student may elect a program leading to a bachelor's degree with honors in a particular subject at the beginning of the junior year and, in some cases, at the beginning of the senior year. The opportunity is open to both A.B. degree and B.S. in B.A. degree candidates. Under this plan, the department appoints an honors adviser who assists the student in working out a unified program of courses for the junior and/or senior years. The program may include a maximum of two honors courses in which the student works with a large measure of independence under the supervision of the adviser. In the senior year, the student must satisfactorily pass a comprehensive examination given by the department.

Students may apply in writing to their major department for permission to take honors work, not later than May 1 in the sophomore year or, in some departments, in the junior year. Department approval is necessary for admission to such work. In exceptional cases and in certain departments, application may be made and admission approved by the department concerned as late as the first two weeks of the senior year but only with consent of the College Board.

Admission to an honors program does not relieve the student from any of the standing regulations. A student's candidacy for honors will be terminated at the end of any semester in which he has not maintained a standard satisfactory to the department in which he is doing honors work. If candidacy is terminated for any reason, the amount of credit to be allowed for honors courses will be determined by the College Board in consultation with the major department.

The department may recommend the student's graduation with honors, high honors or highest honors, the recommendation to occur at the conclusion of the honors program. Only students meeting the standards of the College Board for the degree *cum laude* may receive departmental recommendation for high or highest honors.

PHI BETA KAPPA

The Society of Phi Beta Kappa, founded at the College of William and Mary in 1776, is dedicated to the recognition and encouragement of outstanding scholarly achievement in liberal studies. The Clark chapter, Lambda of Massachusetts, was established in 1953. Each year, a limited number of juniors and seniors are elected to membership on the basis of distinction in scholarship in programs which have been definitely liberal in character.

OTHER HONORARY SOCIETIES

Delta Phi Alpha: National Honor Society in German.
Gamma Theta Upsilon: National Honor Society in Geography.
Phi Sigma Tau: National Honor Society in Philosophy.
Psi Chi: National Honor Society in Psychology.
Sigma Pi Sigma: National Honor Society in Physics.

PRIZES AND AWARDS

Homer Payson Little Award in Geology: Provided by a group of interested alumni, the award is presented each Spring to that student who has achieved the highest record in geology classes during the year. The award is named in honor of Dr. Little, a professor of geology at Clark from 1922 until 1954 and also Dean of Clark College.

Prentiss Cheney Hoyt Poetry Prize: A prize of $20 is awarded annually by the English Department for the best poem by an undergraduate. The prize money is received from a fund established by alumni as a memorial to Dr. Hoyt, a professor of English at Clark from 1909 to 1920.

Loring Holmes Dodd Drama Contest: A prize of $35 is awarded by the English Department to the student writing the best one-act play. Dr. Dodd was professor of English at Clark from 1910 to 1949 and was chairman of that department.

Physics Achievement Award: Each year, the student in Physics 11 who, in the opinion of the instructor, shows the best performance and improvement in the course work is given a copy of the *Handbook of Chemistry and Physics,* made available by the Chemical Rubber Publishing Company.

Chemistry Achievement Award: A copy of the *Handbook of Chemistry and Physics* is awarded each year to the student who ranks at the top of the class in Chemistry 11.

American Institute of Chemists Award: A medal is awarded by the Chemistry Department each year to a senior chemistry major who demonstrates a high potential for the advancement of chemistry.

Ahepa Greek Prize: A prize of $25 is awarded each year to the best student in Elementary Greek. The prize is made available by the Worcester chapter, Order of Ahepa.

Tuition and Other Charges

GENERAL INFORMATION

Tuition, fees and other charges are listed below. Certain special fees may be required of students in certain departments. Charges for the Evening College and the Summer School can be found in their respective catalogs.

Tuition, board, dormitory rent and certain fees are due and payable ten days prior to the opening of each semester. No one is permitted to register for any semester until financial obligations have been satisfactorily arranged. Veterans relying on government aid should have enough resources to meet the initial payments because the first government checks are often delayed. A penalty fee is levied for late registration or for late payment of charges.

TUITION	Tuition is based on a normal program of five courses. Students who enroll for more or less than the normal program pay on a "per course" basis, one-fifth the full tuition. *Refund:* If a student withdraws during the first week of any semester, he is allowed a refund of 80 per cent on tuition; second week—60 per cent; third week—40 per cent; fourth week—20 per cent; and after the fourth week—no refund.
BOARD	All undergraduates not living at home are required to eat at the Dining Hall.
COLLEGE DEPOSIT	All undergraduates are required to pay a deposit to cover minor charges which may be incurred during the academic year. The deposit minus the incurred charges is returnable.
DORMITORY DEPOSIT	The dormitory deposit is required of upperclassmen to reserve a place in the dormitory. It will be credited toward the dormitory charges. The deposit is forfeited if the student does not enroll for the specified semester.
DORMITORY RESIDENCE	Undergraduates not living at home or in a fraternity house must live in the dormitories.
STUDENT ACTIVITY FEE	The fee is required of all undergraduates including part-time but not special students.
INSURANCE	All students are expected to subscribe to the student insurance plan which gives year-round coverage for health and accidents, unless they are similarly protected by other insurance.
APPLICATION FEE	This fee must accompany the application for admission to the undergraduate colleges. It is not returnable.
ADMISSION DEPOSIT	A fee is required of students when they accept the formal offer of admission. It will be credited toward charges for the first semester. The deposit is forfeited if the student does not enroll for the specified semester.
KEY DEPOSITS	Fees may be required of the student by certain departments for entrance to buildings, laboratories, personal lockers or mail boxes.

TUITION	Full program	$750.00 per semester
	Per course	$150.00 per semester
BOARD		$240.00 per semester
DORMITORY CHARGES	Room rent (single)	$200.00 per semester
	Room rent (double)	$150.00 per semester
ACTIVITY FEE		$ 12.50 per semester
LABORATORY FEES	Physics, Biology, Geology, Psychology, Languages, and Chemistry 11	$ 15.00 per semester
	All other Chemistry courses	$ 20.00 per semester
OTHER FEES	Application	$ 10.00
	Matriculation	$ 5.00
	Induction (Freshmen)	$ 35.00
	Induction (Transfers)	$ 10.00
	Diploma (Seniors)	$ 5.00
	Insurance	$ 25.00
	Late registration	$ 5.00
	Late payment	$ 5.00
	Transcripts (no charge for first two)	$ 1.00 each
GRADUATE SCHOOL FEES	Diploma (master's degree)	$ 5.00
	Publications (master's degree)	$ 10.00
	Diploma (doctor's degree)	$ 25.00
	Publications (doctor's degree)	$ 30.00
DEPOSITS	Admissions	$ 50.00
	Dormitory	$ 50.00
	College	$ 25.00

Student Financial Aid

GENERAL INFORMATION

Scholarships and loans are provided by the University from endowed and unendowed funds. A limited amount of part-time employment is available in various offices and departments of the University. Other scholarships and loans are available from varying sources in communities throughout the United States.

SCHOLARSHIPS

Scholarships are awarded on the basis of ability, financial need and character. They vary in amount and some are restricted to definite localities or to particular subjects.

To be eligible for a scholarship, an entering freshman should have an excellent scholastic record. Upperclassmen with satisfactory academic records may apply for scholarships at the beginning of any semester. Transfer students must be in residence at least one semester to be considered for scholarships.

Ordinarily an award for the first semester is continued through the second semester if the holder maintains a satisfactory scholastic record.

Incoming freshmen applying for scholarship aid do so through the College Scholarship Service, Box 176, Princeton, N. J. or, for the Far West, Box 27896, Los Angeles 27, Cal. The service provides the University with an independent analysis of the applicant's financial needs. Application forms may be obtained at the student's secondary school or from the College Financial Aid Officer of the University. Upperclassmen may apply for scholarships through the College Financial Aid Officer of the University.

LOANS

Students who find it necessary to borrow money to continue their education may do so through various sources. Clark maintains its own loan funds which are of the short-term variety with interest bearing immediately upon receipt of the loan.

The National Defense Act Student Loan Program provides funds for long-term loans which bear no interest until a student has completed full-time study. Normally a person borrowing from these funds will repay the amount over a ten-year period. Graduates who enter public school teaching at the elementary or secondary level are eligible to have up to 50 per cent of their loan excused if they remain in teaching for a five-year period.

Other loan sources are also available and should be considered carefully by the applicant. In most cases, information about these loans is available through an applicant's secondary school.

Applications for Clark University loans or for National Defense Loans are available from the Financial Aid Office of the University.

SCHOLARSHIP FUNDS

The following scholarships are currently available from University funds:

The Ellis-Hubley Competitive Scholarships: These are competitive scholarships restricted to male residents of Worcester or neighboring towns who have graduated from secondary schools in those areas. The scholarship accords full tuition plus a stipend and is awarded annually to the beneficiary from the income of funds bequeathed in memory of Gordon A. Hubley, Clark '10, and of Theodore T. and Gary G. Ellis.

One appointment is made each year to a member of the freshman class and the award is normally continued throughout the four years of the college course. Up to five other full tuition scholarships are awarded annually to applicants who, in the judgment of the Scholarship Committee, stand next below the successful applicant. A candidate must receive the recommendation of the principal or headmaster of his secondary school.

The Charles T. Bumer Memorial Scholarships: Up to six full tuition scholarships, one of which includes tuition, room and board, are awarded annually to entering freshmen. These scholarships are granted to outstanding freshman applicants and are named in honor of the late Dr. Bumer, a professor of mathematics at Clark from 1948 to 1960 and chairman of that department.

The Jonas G. Clark Scholarships: These scholarships have been established by the trustees to provide financial aid for undergraduate students.

The Theodore T. and Mary G. Ellis Scholarships: These scholarships provide financial aid for male or female residents of Worcester and Worcester County.

The Whitman Scholarship: Named in honor of Ernest R. Whitman, long-time athletic director at Clark, this scholarship offers full tuition plus a yearly stipend and is awarded to students, usually men, whose qualities of leadership in classroom and campus merit such an award.

The Albert C. Erickson Scholarship: Established by the Tupper Foundation to honor an outstanding Clark student and teacher whose death in 1936 terminated a brilliant career in mathematical physics, this $1,000 tuition scholarship is awarded annually to an undergraduate, normally near the end of his junior year, who has done outstanding work in physics and mathematics and who shows unusual promise in these fields.

The Sanford Memorial Scholarship: Established by alumni in honor of Edmund C. Sanford, president of Clark College from 1909 to 1920, the fund provides an annual scholarship for a male senior undergraduate.

The Livermore and Ambulance Scholarship: The endowment for this scholarship was provided by citizens of Worcester in honor of Charles Randall Livermore, first Clark man to fall in battle in World War I, and of his companions in the Clark Unit of Ambulance Drivers. The scholarship is for male students who are residents of Worcester County.

The Henry A. Willis Scholarships: Male students from Fitchburg, Mass., and vicinity have first consideration in the award of these scholarships. In the absence of suitable candidates from this community, grants may be made to others.

The Helen Brewster Randolph Memorial Scholarship: Established by the late Professor Charles B. Randolph in memory of his mother, the fund provides scholarships restricted to male college students.

The Charles B. Randolph Fund: The fund is restricted to male students, preferably those whose major is a foreign language.

The Alice Friend Newton Memorial Scholarship: This scholarship provides full tuition for an upperclass student in the Women's College whose major is psychology.

The William Richardson Scholarship: This scholarship was established by a bequest of Carlton E. Richardson, Clark '08, as a memorial to his father. The income of this fund is available preferably for male students of the Protestant faith.

The Jennie L. Richardson Scholarship: This scholarship was established by a bequest of Carlton E. Richardson, Clark '08, as a memorial to his mother. The income of this fund is available for female students of the Protestant faith.

The B'nai B'rith Scholarship: The Worcester Chapter, Order of B'nai B'rith, provides a scholarship primarily but not exclusively for the aid of Jewish students.

The Clark University Faculty Women's Club Scholarships: These scholarships are available to undergraduate students, either men or women, who rank high in intellectual and personal qualities.

The Aaron Fuchs Memorial Scholarship Fund: Given by Mrs. Celia Fuchs in memory of her husband and in honor of her sons, Lawrence, Clark '44, and Jerome, Clark '53, provides scholarship aid for non-residents of Worcester or Worcester County.

The Reginald Bryant Allen Fund: The income from this fund is to be awarded annually to a deserving student majoring in mathematics.

The Alumni Group Scholarship: One full tuition scholarship to an accredited freshman is awarded from a fund established by the trustees and the first three classes to graduate from Clark College, '05, '06 and '07.

The Charles W. and Annie L. Bruninghaus Fund: The income from this fund, established in 1957, provides scholarship aid to undergraduates.

The Levi Knowlton Fund: A bequest of Mary H. Nixon in honor of her father, Levi Knowlton, to provide scholarship aid to undergraduates.

The Abraham Persky Scholarship Fund: The income of this fund is used to assist deserving undergraduates.

Pleiades Scholarship: This scholarship is awarded annually to a member of the Women's College on the basis of active citizenship, scholarship and financial need from funds raised by Pleiades, senior women's honorary society.

The Probus Club Scholarship: This scholarship is supported by the Probus Club of Worcester.

The National Council of Jewish Women Scholarship: The Worcester section, National Council of Jewish Women, awards a scholarship each year to a Jewish student of the Women's College who resides in Worcester County.

The High School Basketball Tournament Scholarship: Receipts of the High School Basketball Tournament held annually at Clark provide assistance to male undergraduates.

The Art Museum Scholarship: This scholarship is available to Worcester Art Museum students to pursue studies at Clark.

LOAN FUNDS The following loan funds are currently available to undergraduates:

The Alumni Loan Fund: Established by the trustees and alumni for undergraduate assistance.

The May S. Rogers Loan Fund: The fund is available to undergraduates who need loan assistance.

The Haskell Talamo Loan Fund: The fund has been established by relatives and friends of the late Dr. Haskell Talamo, Clark '16.

The Louis N. Wilson Fund: The fund was established by the first librarian of Clark, as a loan source for male students in the college.

National Defense Student Loans: These loans are available to undergraduate students, especially those with superior records who desire to teach in elementary or secondary schools or who have special aptitude in science, mathematics or a modern foreign language.

Student Services

DINING HALL The University Dining Hall is operated for the convenience of the students and staff of the University. Service is cafeteria style. Undergraduates who do not live at home are required to eat at the Dining Hall. Other members of the University are welcome on a semester basis or for single meals.

DORMITORIES

Men not living in their own homes are required to live in the men's dormitory or in a fraternity house. Rooms are reserved on receipt of the dormitory deposit fee. The deposit is later applied to room rental charges.

Women not living in their own homes are required to live in the women's dormitory.

Room reservations and deposit procedures are the same for women's and men's dormitories.

INFIRMARY

Facilities are provided at the University Infirmary for the treatment of emergencies and for minor medical services to all students while they are on campus. In addition, there is provision for the temporary hospitalization of resident students in cases of more serious illness. A nurse and University physicians are in attendance. The infirmary is open throughout the academic year.

HEALTH AND ACCIDENT INSURANCE

Subscription to a low-cost health and accident insurance plan covering ordinary medical expenses not covered by the University's health fee is required of all students unless they are similarly protected by other insurance.

PSYCHOLOGICAL CLINIC

A psychological clinic is available on campus to provide testing and counseling services to students who wish help in academic or personal adjustment. If desired, other more appropriate University or community resources can be recommended to the student. The staff includes clinic director, Dr. Robert W. Baker, other clinical psychologists in the Department of Psychology and consultants in psychiatry, psychiatric social work and clinical psychology.

GUIDANCE AND PLACEMENT BUREAU

Individual counseling on problems of vocational planning and adjustment to college life is also available through the Guidance and Placement Bureau. The service supplements the advisory services of individual teachers and deans. The bureau assists the student in job exploration, informing him of available positions and arranging interviews with potential employers. Students are urged to establish a permanent reference file. Part-time employment opportunities are also listed with the bureau for students who wish to work during their college career to help meet college expenses. The bureau is directed by Dr. James M. Coffee, associate professor of education.

Student Life

STUDENT LIFE

Student life at Clark is, as expected at a small institution, friendly and informal. Students are expected to conform to recognized standards of morality, good order and consideration for others. College activities are under a minimum degree of faculty supervision. Though all activities are not listed below, some deserve description.

STUDENT ACTIVITIES FEE

Non-athletic activities are partially supported by the student activities fee which, in addition, admits students to all athletic contests on campus, provides them with the college newspaper and yearbook and admits them to certain lectures, plays and concerts.

LECTURES AND CONCERTS

Throughout the year, lectures and concerts are held on campus bringing outstanding scholars, musicians and artists to the campus. The Clark Fine Arts Series and the Clark Faculty Lectures in the Humanities are the two major sources of such cultural activity. In addition, the student assemblies also bring outstanding lecturers to the campus. In recent years, these programs have included the Budapest String Quartet, Canadian Players, Robert Gorham Davis, Henri Peyre, Turnau Opera Players and the National Ballet of Finland.

MUSIC Musical organizations open to all students include the University Chorale, Concert Choir, Madrigal Singers, "Hit'n Misters" and the Chamber Players.

DRAMATICS The Clark University Players Society each year presents dramatic offerings with student casts. It has a distinguished record of productions which, in recent years, has included *Medea, Our Town, Twelfth Night* and *Hedda Gabler*. An experimental theater group also performs in productions such as Ionescu's *The Bald Soprano.*

SPEECH AND DEBATE The Debate Council annually directs a High School Debate Clinic as well as entering numerous debate contests.

SOCIAL SCIENCE FORUM In recent years, this group has brought to campus such persons as Norman Thomas, Malcolm X, Rev. Willard Uphaus and Thurgood Marshall, offering an opportunity for students to hear and question controversial views.

PUBLICATIONS Students may join the staffs of *Scarlet,* weekly student newspaper; *Helicon,* student literary magazine; *Fotch,* student humor magazine; *Pasticcio,* student yearbook; or *Social Science Forum* or *Mainstream,* journals of student opinion.

OTHER ORGANIZATIONS Other campus organizations are affiliated with areas of department instruction, such as the Physics, Psychology and German clubs; hobbies or interests, such as the Chess Club, Pre-Law Club or Society for the Advancement of Management; and other activities, such as the Outing Club.

FRATERNITIES Four fraternities are currently associated with the University. They are Lambda Chi Alpha, Tau Epsilon Phi, Kappa Phi and Phi Sigma Delta. All own fraternity houses nearby campus where members live.

GRYPHON AND PLEIADES Each year, a group of men and women are chosen from the junior class on the basis of outstanding characteristics to join Gryphon–senior men's honorary society, or Pleiades–senior women's honorary society. The societies play an important role in campus life and in maintaining the traditions of the College. They supervise such annual events as *Rope Pull, Free Day* and the *Christmas Tea.* In addition, they sponsor annual lectures.

SCARLET KEY In addition to acting as guides for campus visitors, *Scarlet Key,* a sophomore-junior service organization, undertakes other activities beneficial to the University.

Physical Education and Athletics

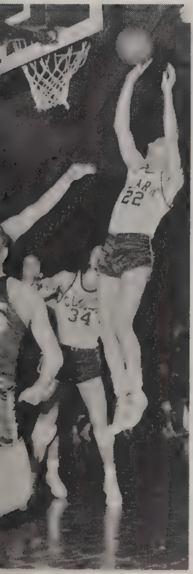
PHYSICAL EDUCATION Physical Education is required of all students for the general promotion of their health and mental efficiency. Two years of physical education, two hours per week, is a prerequisite for graduation. Students are excused from this requirement only on the recommendation of the medical director.

The physical education program for women requires, during each of the two years, attendance at classes in body mechanics and one of the rhythmic activities. Participation in one group sport and in one individual sport is also required. Folk dancing, square dancing and modern dancing are offered.

ATHLETICS Students in the Men's College have the opportunity to participate in intercollegiate soccer, baseball, tennis, basketball, golf, hockey and crew. Competent coaches have immediate supervision over the teams.

Students in the Women's College can participate in field hockey, crew, horseback riding, archery, tennis, basketball, volley ball, badminton, fencing, softball and golf. Tournaments are held in the spring and fall and trophies are awarded to winners. Women use their own gymnasium for practice but have the use of the Alumni Gymnasium for games with outside organizations.

ELIGIBILITY Participation in organized extracurricular competitive activities is denied only when a student's scholastic record indicates that continuance in an activity might be responsible for scholastic failure. Students carrying less than a full program of studies are ineligible unless the reduced program permits graduation at the end of the year in which the program is carried. A student transferring with advanced standing from another four-year college is ineligible for one calendar year from the date of registration at Clark to participate in any varsity sport in which he participated at the previous institution. Special students are not normally entitled to participate in competitive intercollegiate sports.



"The very best kind of education is obtained in doing things one's self under competent direction and with good guidance."
— CHARLES W. ELIOT
SCHOOL OF GEOGRAPHY ROOM

THE GRADUATE SCHOOL

The Graduate School

GENERAL INFORMATION

Clark University was initially established as one of America's first institutions dedicated exclusively to graduate study and research. Its faculty and graduates have endowed the University with an impressive record of accomplishments through the years. Under the administration of the Graduate Board, Clark offers programs leading to master's and doctor's degrees to qualified holders of a bachelor's degree or its equivalent of attainment.

Master of Arts degrees are offered in the fields of biology, chemistry, economics, education, geography, government, history, international relations, mathematics, physics, psychology and sociology. A Master of Business Administration degree is offered through the Evening College of the University.

Doctor of Philosophy degrees are offered in biology, chemistry, chemical-physics, economics, geography, history, international relations, and psychology. A Doctor of Education degree is offered by the Department of Education.

Departments which do not at present accept candidates for graduate degrees may offer courses which are suitable for inclusion in a program of graduate study.

Scholarships and fellowships afford financial aid to candidates for the graduate degrees and are listed at the end of this section. Additional information concerning departments and their offerings will be found in the section entitled "Departments and Courses."

INQUIRIES

General inquiries and correspondence concerning the Graduate School should be directed to the Dean of the Graduate School. Inquiries concerning specific programs of graduate work and applications for admission should be addressed to the chairman of the department concerned.

ADMISSION TO THE GRADUATE SCHOOL

Admission to the Graduate School may be granted only by the Graduate Board on the recommendation of a department of the University. Admission to the school does not imply admission to candidacy for a degree.

Application: A prospective applicant should communicate with the department in which he expects to do his major work. If he is encouraged by the department to make application, he will be provided with application blanks. These should be returned to the chairman of the department with an official transcript of undergraduate work and letters of recommendation from at least two persons who are competent to judge the applicant's qualifications.

In addition, applicants for admission to the Graduate School are strongly urged, and may be required, to submit a record of attainment in the Graduate Record Examination given by the Educational Testing Service, Princeton, N. J.

Application for both admission and for financial aid should be completed not later than March 1 if the applicant intends to begin his studies in the following September. Applications may be submitted, however, throughout the year and periodically are considered by the Graduate Board.

Admission: Admission to the Graduate School is granted for entry only at a specified time and lapses if the student fails to enter at that time. Admission as special or part-time graduate students may be granted to qualified applicants who do not wish to work for a degree or who cannot devote full time to study.

MASTER OF ARTS

Residence: An academic year of full-time study in residence, or its strict equivalent in summer sessions and part-time study, is a minimum requirement for a master's degree. Residence study is broadly defined as graduate work done at Clark University under the immediate personal supervision of at least one member of the university faculty.

Foreign Language: A reading knowledge of a foreign language, usually French or German, may be required of candidates for the degree of master of arts at the discretion of the major department.

Candidacy: Application for admission to candidacy for a master's degree should be filed with the Dean of the Graduate School not later than the first week of the last full semester which the student expects to spend in residence as a candidate for this degree.

Applications will be considered by the Graduate Board when the student has completed one semester of full-time graduate work or its equivalent in residence at the University, obtained

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the written endorsement of his major department and paid the diploma fee and publication fee.

Candidacy for the degree of Master of Arts is valid through the fourth commencement after admission to candidacy. For satisfactory reasons, candidacy may be extended once for an additional period of three years by vote of the Graduate Board. If the candidacy expires without the degree having been awarded, the diploma and publication fees, less any expenses incurred, are returned.

Course Requirements: Each student must meet a minimum course requirement of five courses, or their equivalent in half-courses. The program must be approved by the major department. One of the courses may be a research course devoted to the preparation of the thesis.

Thesis: The thesis will be written on a topic in the field of the student's special interest under the supervision of a member of his major department. A copy of the thesis, a précis of it approved by the supervising instructor, and an academic history page must be deposited in the Registrar's office not later than three weeks before the date of the commencement at which the degree is to be conferred. A second copy of the thesis with a copy of the précis must be delivered to the major department. The précis may not exceed 75 words in length. The title page, précis and academic history forms are obtainable from the Registrar. The ribbon copy of the thesis must be typed on prescribed paper, marginally ruled in black and obtainable at the University Bookstore.

The thesis is deposited by the Registrar in the University Library. The précis is printed by the University in an annual publication, *Dissertations and Theses.*

Each candidate must make a satisfactory record in such written examinations as may be required by the major department and in a final oral examination by a committee of three or more, two of whom must be members of the Graduate Board.

MASTER OF ARTS IN EDUCATION

The residency, candidacy, course and examination requirements are basically the same as those listed for the degree of Master of Arts.

Thesis: Students may choose one of three options, subject to the approval of the Department of Education. They may choose to (1) prepare a thesis or special report, as required for the M.A. degree; or (2) elect two additional semester courses in subject-matter fields; or (3) elect a double seminar in which papers are prepared and presented to fellow students and staff.

Further information concerning the degree of Master of Arts in Education may be found in the section, "Departments and Courses," listed under the Department of Education.

MASTER OF BUSINESS ADMINISTRATION

This degree is offered through a program of the Evening College of the University. For further information, see the section on the "Evening College."

DOCTOR OF EDUCATION

The University, beginning in 1962, offers a program leading to the degree of Doctor of Education. The requirements for this degree closely parallel those for the degree of Doctor of Philosophy. Applicants for admission to the program are expected to satisfy all requirements for the Doctor of Philosophy degree.

DOCTOR OF PHILOSOPHY

Only such candidates as give evidence of general proficiency, power of investigation and high attainments in the special fields in which their major subjects lie will be encouraged to proceed to the degree of Doctor of Philosophy.

Residence: The minimum requirement is one year of full-time study, or its equivalent in part-time work, in residence which is broadly defined as graduate work done at Clark University under the immediate personal supervision of at least one member of the University faculty. If the degree of Master of Arts has been earned at Clark, this requirement is an addition to the residence requirement for that degree. For the degree of Doctor of Philosophy, four courses, or the equivalent in half-courses, is a normal full-time program.

Foreign Language: A prospective candidate must pass an examination in the reading of a modern foreign language to be chosen at the discretion of his department from the following: French, German, Russian, Spanish. The examination, conducted by a committee composed of representatives from the graduate department and the language department, should be passed at the latest before filing application for admission to candidacy.

Each graduate department may make such additional language or related requirements as the student's field of research may demand, and must report such requirements in each case to the Dean of the Graduate School.

Preliminary Examination: Upon completion of preparation in his fields of study a prospective candidate takes a preliminary examination set by his major department. This examination may be written or oral, or a combination of both. The chairman of the department may invite non-members of the department from within or without the University to participate in the examination.

Candidacy: Applications for admission to candidacy must be filed with the Dean of the Graduate School no later than November 1st in any academic year by students who hope to receive the degree at the end of that academic year.

An application for admission to candidacy will be considered by the Graduate Board when the applicant has (1) completed two full academic years of graduate work, or its equivalent in part-time work, including one year at Clark University; (2) passed the required examination in a foreign language, (3) passed a preliminary examination in his chosen field of study; (4) obtained the written endorsement of his major department; and (5) paid the diploma fee and publication fee.

Candidacy for the degree of Doctor of Philosophy is valid through the fourth commencement after admission to candidacy. For satisfactory reasons, candidacy may be extended once for an additional period of three years by vote of the Graduate Board. If candidacy expires without the degree having been awarded, the diploma fee and publication fee, less any expenses incurred, are returned.

Dissertation: A dissertation which is expected to make an original contribution to some special field of knowledge is required of each candidate. The dissertation, approved by the chief instructor, is laid before the examining committee at the final oral examination.

An abstract of the dissertation, not exceeding 600 words in length, and a précis, not exceeding 75 words, both approved by the instructor under whom they were written, are also required.

Not later than four weeks before the commencement at which the degree is to be conferred, the first, or ribbon, copy of the dissertation, together with two official title pages, an academic history page, the first copy of the abstract and of the précis, each in a form prescribed, must be delivered to the Registrar. At the same time, a second copy of the dissertation and of the abstract may be required by the major department. The title page, précis and academic history forms are obtainable from the Registrar. The ribbon copy of the dissertation must be typed on prescribed paper, marginally ruled in black, obtainable at the University Bookstore.

The Registrar deposits the dissertation and the abstract in the University Library where they remain permanently. A microfilm copy of each dissertation is made by University Microfilms, Inc., of Ann Arbor, Mich., and is available for duplication by them on request. The abstract is printed in *Dissertation Abstracts;* the précis is printed by the University in an annual publication, *Dissertations and Theses.*

Final Examination: The final examination is oral and lasts for at least two hours. Additional written examinations may be given if the major department so directs. The candidate is expected to defend his dissertation and, at the discretion of the examining committee, may be questioned on the entire special field of his study. The oral examination is conducted by a committee of at least four members, composed of the chairman of the department, at least one other member of the Graduate Board, and such members of the department and non-members from within or without the University as the chairman may appoint. The chairman notifies the Dean of the Graduate School, at least one week in advance, of the time and place of the examination and the composition of the committee. The Dean is authorized to invite any person from within or without the University to be present and to assist in the examination.

GRADUATE SCHOLARSHIPS, FELLOWSHIPS AND ASSISTANTSHIPS

Graduate fellowships and scholarships are provided for well-qualified, full-time graduate students by the University from endowed funds and from other sources. Financial aid to graduate students is available also in the form of grants from a number of special funds, and in some departments, from sponsored research grants. A limited amount of part-time employment is available in the various offices and departments of the University. Frequently, as in the case of departmental assistants, this employment yields useful experience.

Application: Application for a scholarship or fellowship to begin in September should be made before March 1 to the chairman of the department in which the applicant expects to do his major work. Late applications are acted upon periodically. All applications, after endorsement by the department, go to the Graduate Board for final action.

According to an agreement between the members of the Association of American Universities, elections of fellows and scholars will be communicated in April, but not before, to each successful candidate.

Research Fellowships: These fellowships may be awarded to graduate students who have fulfilled their residence requirements and who are pursuing a full-time doctoral program.

Teaching Assistant Scholarships or Fellowships: These may be awarded to teaching assistants who are engaged in full-time activity on campus, of which approximately half-time is devoted to teaching duties and approximately half-time, up to a maximum of three courses, is devoted to graduate study.

Teaching Assistantships: In several departments, teaching assistantships, involving less than half-time, are available with stipends which vary accordingly to the amount of service agreed upon.

Assistantships: In several departments, assistantships are available. They involve a variety of services with stipends to correspond, and usually provide the student with experience which will be useful in his later professional work.

Graduate Fellowship and Scholarship Funds: Stipends for graduate fellowships and scholarships are provided by:

THE GEORGE FRISBIE HOAR FUND, the gift of Andrew Carnegie in honor of the second president of the University's Board of Trustees;

THE AUSTIN S. GARVER FUND, a bequest from Austin S. Garver, member of the Board of Trustees from 1908 to 1918;

THE CHARLES H. THURBER FUND, provided by Charles H. Thurber, member of the Board of Trustees from 1913 to 1938 and president of the board from 1919 to 1937;

THE GEORGE S. BARTON FUND, a bequest from the Hon. George S. Barton of Worcester, to be used for the benefit of native-born citizens of Worcester;

THE ALUMNI ASSOCIATION FUND, provided by alumni who hold the degree of Doctor of Philosophy to benefit students studying for that degree;

and THE JOSEPH F. DONNELLY MEMORIAL FUND, a bequest from Lucretia F. Donnelly to help men who are enrolled in a course leading to the degree of Doctor of Philosophy.

GRADUATE AID

THE JOHN WHITE FIELD FUND, established by Mrs. Eliza W. Field to provide for the minor needs of a scholar or fellow;

THE ELIZA D. DODGE FUND, to be granted to graduate students of limited means who are engaged in research work;

THE MYERS FUND, a gift of George E. Myers, Ph.D., '06, to assist graduate students to do research in education and psychology.

GRADUATE LOANS

Loans, bearing interest at three percent per year, are available for graduate students from these funds:

THE MARY S. ROGERS SCHOLARSHIP AND LOAN FUND, established in 1926 for the benefit of students in the graduate school;

and THE SARAH M. THURBER LOAN FUND, established by the late Dr. Charles H. Thurber, former president of the University Board of Trustees, as a memorial to his mother.

NATIONAL DEFENSE STUDENT LOANS

These loans are available to graduate students, especially those with superior records who desire to teach in elementary or secondary schools or who have special aptitude in science, mathematics or a modern foreign language. Applications for these loans should be made at the Bursar's office.

DEPARTMENTAL FUNDS

THE WALLACE W. ATWOOD RESEARCH FUND. The income of this fund may be used at the discretion of the Staff in the Graduate School of Geography for the promotion of field studies in geography by any member of the Staff, or any one of the alumni holding a graduate degree from the Graduate School of Geography, or for the publication of results of such research work.

THE CHESTER BLAND FUND. The income of this fund is preferably used to provide aid to a promising student, either in residence or engaged in research elsewhere under the direction of the Department of History, Government and International Relations. It may also be used to defray the expense of visiting lecturers or of departmental research.

THE WALLACE W. GREENWOOD FUND. The income only is to be divided between the Departments of Physics and Chemistry and to be used for any purpose within the scope of these two departments.

THE MORTON L. "SONNY" LAVINE FOUNDATION, a memorial to Lieutenant Lavine of the United States Army, World War II. The income is to be used for the promotion of research in the Department of History, Government and International Relations.

THE LIBBEY FUND, bequeathed to the University by Mary E. Libbey, is to establish a fellowship in Physical Geography and to aid the Department in that field.

THE SUMMER SCHOOL

The Summer School

SUMMER STUDY Intensive instruction in numerous fields of study is offered through two summer programs: a six-week summer session and a three-week intersession program. A variety of courses is offered for undergraduates, graduate students and teachers. A student may take three semester courses (9 semester hours of credit) by attending the Intersession and the Summer Session. Evening courses are also available during the summer to all students to continue their education while engaged in day-time employment. The student is encouraged to attend informal afternoon seminars, conferences and week-end excursions to New England cultural centers.

DEGREES AND CREDIT All courses offered in the Summer Session or Intersession programs are accepted at Clark for credit toward bachelor's degrees unless they are specifically limited in the description of the course. Many courses count toward the degrees of Master of Arts, Master of Arts in Education and Doctor of Philosophy. However, approval for such courses should be obtained in advance from the student's major department.

The degree of Master of Arts may be obtained in certain fields by completing successfully a full-time program for five summers. Students interested in such a program should discuss their plans with the chairman of the department concerned.

Graduate students formally registered in the Summer School may, with the approval of their major department, enroll in thesis courses under the direction of regular members of the staff.

Each single course offered in the Summer School is equivalent to a half-year course of the Clark academic year and yields three semester hours of credit. The double courses in languages and occasionally other subjects, which meet for two lecture periods a day for six and one-half weeks, are equivalent to year-courses or six semester hours.

A student may carry in a normal program one course in the Intersession and two courses in the Summer Session. Permission to carry an additional course may be granted but only in exceptional cases and with approval in writing prior to registration.

SUMMER SCHOOL CATALOG Detailed information concerning the Summer Session and Intersession is contained in a Summer School catalog which may be received upon request from the director of the Summer School.

EVENING COLLEGE

GENERAL INFORMATION

The Evening College, established in 1953 as an institution devoted to adult learning, has three primary functions. With the conviction that education in our modern society must be a lifelong process, it provides university education for adults of all ages who seek further knowledge and personal development through selected studies in the broad areas of the liberal arts. Further, in recognition of the rapidly developing and changing needs of business and the professions, it provides courses designed to help working men and women improve their occupational skills and to prepare for positions of increased responsibility.

Secondly, the Evening College provides an opportunity for adults to earn the bachelor's degree, exclusively by evening study, through programs planned to meet the unique educational needs of the mature person. Formal programs are available leading to the degree of Bachelor of Science in either general studies or business administration. The Evening College also offers the Diploma in General Studies after completion of a short formal program in liberal education designed specifically for adults. The Evening College also offers the degree of Master of Business Administration.

Finally, as a community service, the Evening College organizes frequent non-credit short courses, institutes and seminars, which are tailored to the specific needs of various civic, professional and business groups.

ADMISSION

Students may be enrolled for either individual courses or formal programs of study.

Individual Courses: Admission to individual courses in the Evening College is open to all interested adults seeking to further their education. High school graduation is not required but

desirable. Continued attendance is contingent upon evidence of ability to profit from the instruction offered. Advanced courses for which prerequisite courses or experience are indicated are open only to persons who meet the stated requirements.

Admission To Formal Programs: Adults applying for a formal program of study in the Evening College will be required to submit records of their previous schooling prior to admission. Except under unusual circumstances applicants must possess a diploma from an accredited high school. Applicants for the Bachelor of Science degree or the Diploma in General Studies who have not attended college previously may arrange to have their high school records forwarded to the Evening College on forms supplied to them on request to the college. Adults who have attended other colleges should request that their transcripts be forwarded directly to the Evening College.

MASTER OF BUSINESS ADMINISTRATION

The Evening College offers a graduate program leading to the degree of Master of Business Administration. Established in 1962, the program is designed to provide the best possible education for men and women at the graduate level for careers in business. Through carefully selected substantive materials and an analytical approach to the practice of management, the program is designed to enable college graduates to supplement job experience in preparing for positions of executive responsibility. The course of study emphasizes administrative decision-making rather than details of initial positions in business. Qualified students may take advantage of the program while remaining in their present business activities and continuing to gain experience through evening programs of study. In offering the program, the Evening College seeks to broaden its services to the local community and to provide university education for adults at an additional level of formal study.

The curriculum consists of 30 semester hours of credit. Details of the curriculum, tuition and admissions requirements will be found in the Evening College Catalog.

EVENING COLLEGE CATALOG

Detailed information about the Evening College is contained in a special catalog available on request from the director of the Evening College.

DEPARTMENTS AND COURSES

Departments and Courses

CONTENTS Listed on the following pages are department faculties, undergraduate and graduate programs and course offerings. The departments are listed in alphabetical order.

DEPARTMENT FACULTIES The staff of each department is listed by rank and by alphabetical order within rank. Department chairmen are listed first. For further information concerning the faculty, see the general faculty listing.

DEPARTMENT PROGRAMS Each department offers information concerning its undergraduate offerings and requirements as well as the offerings and requirements concerning graduate study, if a graduate program is offered. For further information concerning a major field of study, students should consult their faculty advisers or major department chairmen.

DEPARTMENT COURSES The course offerings of each department are listed in their numerical sequence. The announced courses are subject to any modification which may become necessary.

COURSE NUMBERING SYSTEM Each course is indicated by number and title. A course number, unmodified by "a" or "b" indicates a year-course, one which continues through two semesters of an academic year. A course number followed by an "a" refers to a half-course usually offered in the first semester. A number followed by a "b" refers to a half-course usually offered in the second semester.

Two-semester courses are divisible unless an explicit statement of indivisibility appears in the course statement. Courses which are indivisible normally require the successful completion of the first semester as a prerequisite to entering the second semester.

COURSE SEQUENCE Courses are arranged, in general, in sequence progressing from elementary to advanced courses.

Courses which are *primarily for undergraduates* are designated by numbers beginning with the numeral *1*.

Courses for *advanced undergraduates and graduate students* are designated by numbers beginning with the numeral *2*.

Courses which are *primarily for graduate students* are designated by numbers beginning with the numeral *3*.

ORDER OF DEPARTMENTS AND OFFERINGS

The listing on the following pages is as follows:

Biology
Business Administration
Chemistry
Classics
Comparative Literature
Economics and Sociology
Education
English
Fine Arts
Freshman Orientation
Geography
Geology
German
History, Government and International Relations
Interdepartmental Majors
Linguistics
Mathematics
Music
Philosophy
Physics
Psychology
Romance Languages

Biology

DEPARTMENT FACULTY

Rudolph F. Nunnemacher, Ph.D., *Professor of Zoology, Department Chairman*
Vernon Ahmadjian, Ph.D., *Associate Professor of Botany*
George Camougis, Ph.D., *Associate Professor of Physiology*
John T. Reynolds, Ph.D., *Associate Professor of Microbiology*
Harris Rosenkrantz, Ph.D., *Associate Professor (affiliate) of Biology*
Aldo P. Truant, Ph.D., *Associate Professor (affiliate) of Biology*
Burton N. Gates, Ph.D., *Research Associate in Botany*
Joseph C. Curtis, Ph.D., Assistant Professor of Biology

UNDERGRADUATE PROGRAM

Biology 11 presents a comprehensive view which is prerequisite to all other courses in the department. A departmental major must take Biology 11, three advanced courses in biology, Chemistry 11, Physics 11, Mathematics 11 and at least one additional course in chemistry, physics or geology. Mathematics 11 does not count toward the fulfillment of the major requirements.

GRADUATE PROGRAM

The department offers courses leading to Master of Arts and Doctor of Philosophy degrees in specialized phases of botany, zoology, physiology and bacteriology. Admission to the graduate program assumes adequate preparation in the basic sciences, an overall undergraduate record of B or better, and satisfactory standing in the Graduate Record Examination. Tuition scholarships and Teaching Assistantships are available. More detailed information can be obtained by writing to the department chairman.

Master of Arts: The program usually requires three or four semesters of academic work, including participation in the Graduate Seminar—Biology 350, and research culminating in an acceptable thesis. Prior to or during the program the student must have a semester course beyond the introductory biology level in botany, zoology and physiology.

Doctor of Philosophy: The requirements are identical with those of the University and can be found in the catalog section on The Graduate School. The student's program is planned according to his needs with his program director.

COURSES

11. General Biology.

Principles and problems of biology. First semester is concerned with the botanical kingdom; second semester with the animal kingdom. One laboratory period per week. Indivisible course, except by consent of the department. Open to freshmen.
Mr. Ahmadjian, Mr. Nunnemacher.

12a. Comparative Anatomy.

The morphology of vertebrates from a comparative standpoint, with emphasis on the evolution of animals from fish to mammals. Two lectures and two laboratory periods per week. Mr. Nunnemacher.

14a. Cryptogamic Botany. Not offered, 1963-64.

Morphology, physiology and ecology of the lower plants. Lectures will place special emphasis on algae, fungi, lichens and mosses. Laboratory work will be primarily concerned with experimentation on the sexuality and genetics of selected types of bacteria, fungi and algae. Field work will be included. Three lectures and one laboratory per week. Prerequisite: first semester, Biology 11. Mr. Ahmadjian.

15b. Systematic Botany.

Taxonomy and classification of flowering plants, with emphasis on New England flora. A collection of 100 plants is required as well as a two-day spring collecting trip to the Berkshires. Three lectures and one laboratory period per week. Prerequisite: first semester, Biology 11. Mr. Ahmadjian.

17b. General Ecology. Not offered, 1963-64

Introductory study of the distribution of plants and animals, their inter-relationships and adaptions to a wide variety of environments such as seashore, sand dunes, woodlands and ponds. Field trips to Mt. Monadnock and other areas of ecological interest will be taken during laboratory periods or on Saturday. Three lectures and one laboratory period per week. Usually offered during the summer. Mr. Nunnemacher.

18b. Genetics. Not offered, 1963-64.

Principles and problems of genetics. Mr. Ahmadjian.

120b. Histology. Not offered, 1963-64.

Comprehensive course on tissue structure, with emphasis on the study of mammalian tissues. Two lectures and two laboratory periods per week. Mr. Nunnemacher.

137a. Cellular Biology. Not offered, 1963-64.

Development and implications of modern concepts of cells and their activities. Three lectures per week. Prerequisite: Biology 11 or its equivalent. Mr. Reynolds.

140a. Principles of Physiology.

Introduction to basic physiological concepts at the cellular level followed by animal physiology, with emphasis on vertebrates. Three lectures per week. Prerequisite: Biology 11. Mr. Camougis.

ADDITIONAL COURSES IN BIOLOGY

130A	Cellular Biology (3 lecture periods per week)	Mr. Curtis
257B	Biophysics " " " " "	Mr. Curtis
268A	Principles of Pharmacology	Mr. Truant
352B	Special Graduate Seminar	Mr. Curtis

201b. ADVANCED SYSTEMATIC BOTANY. Not offered, 1963-64 Mr. Ahmadjian.

204~~b.~~a. LICHENOLOGY.
Taxonomy and physiology of lichens and isolated lichen components. Laboratory emphasis on special projects and field work. Three lectures and one laboratory period per week. Prerequisite: Biology 14a or consent of the instructor. Mr. Ahmadjian.

215a. INVERTEBRATE ZOOLOGY. Not offered, 1963-64.

121b.
~~221~~b. EMBRYOLOGY.
Consideration of the fundamentals of vertebrate embryology. Two lectures and two laboratory periods per week. Mr. Nunnemacher.

224a. NEUROANATOMY. Not offered, 1963-64
The structural and functional organization of the human central nervous system. Three lectures or demonstrations per week. Prerequisite: Biology 12 or consent of the instructor. Mr. Nunnemacher.

230b. BACTERIOLOGY. Not offered, 1963-64.
Biology of the bacteria and certain related forms. Three lectures and one laboratory period per week. Prerequisites: Biology 137a, Chemistry 13 (second semester of Chemistry 13 may be taken concurrently) and consent of the instructor. Mr. Reynolds.

231b. BACTERIAL PHYSIOLOGY. Not offered, 1963-64.
Lecture topics and laboratory exercises selected to demonstrate chemical and physical principles underlying bacterial activities. Two lectures and two laboratory periods per week. Prerequisites: Biology 230b and consent of the instructor. Biology 240a is recommended. Mr. Reynolds.

232a. ADVANCED BACTERIOLOGY. Not offered, 1963-64.
Two lectures and two laboratory periods per week. Prerequisites: Biology 231b and consent of the instructor. Mr. Reynolds.

240a. GENERAL PHYSIOLOGY.
Introduction to the physical and chemical phenomena underlying the functions common to living organisms. Two lectures and two laboratory periods per week. Prerequisites: Biology 11, Chemistry 11 and Physics 11. Mr. Camougis.

241b. ENDOCRINOLOGY. Not offered, 1963-64.

242b. COMPARATIVE ANIMAL PHYSIOLOGY. Not offered, 1963-64.

244b. BIOCHEMISTRY.
The principles of mechanisms of biochemical reactions in an understanding of the metabolism of foodstuffs and the role of enzymes, vitamins and hormones. An acquaintance with the instrumentation in biochemical research will be presented. Usually offered in the Spring semester in the Evening College. Prerequisite: Chemistry 13. Mr. Rosenkrantz.

249b. NEUROPHYSIOLOGY.
Physiology of central and peripheral nervous systems, receptors and muscles, considered in both vertebrates and invertebrates. Three lectures and one laboratory period per week. Prerequisite: Biology 140b or 240a. Mr. Camougis.

261	SPECIAL PROBLEMS IN BOTANY	MR. AHMADJIAN
262	SPECIAL PROBLEMS IN ZOOLOGY	MR. NUNNEMACHER
264	SPECIAL PROBLEMS IN PHYSIOLOGY	MR. CAMOUGIS
265	SPECIAL PROBLEMS IN MICROBIOLOGY	MR. CURTIS

250a. UNDERGRADUATE SEMINAR IN BIOLOGY. Not offered, 1963-64.
Designed to provide experience for advanced undergraduates in the presentation and critical evaluation of research reports. Limited enrollment. Equivalent of three lectures per week. Prerequisite: consent of the instructor. Mr. Reynolds.

260. SPECIAL PROBLEMS.
Advanced semi-independent study of an approved topic under the direction of a departmental member. Hours and credit to be arranged. Required for honors in biology. Staff.

S. 267. INSTRUMENTAL PROCEDURES IN BIOLOGICAL INVESTIGATIONS.
Theory and application of various analytical procedures and use of modern instrumentation in biological problems. Practical introduction to analytical balance, centrifuge, vacuum distillation, pH, dialysis, chromatography, counter-current distribution, photoelectric colorimetry, fluorometry, turbidometry, spectrophotometry and spectroscopy. Instrumentation will be coordinated with techniques of tissue preparation, histochemistry and radioactive tracers. Offered in the summer. Mr. Rosenkrantz.

268a. PRINCIPLES OF PHARMACOLOGY.
This course is intended to acquaint the student or research worker with established principles and the more important phenomena involved in the study of pharmacology. Particular emphasis is placed on the quantitative aspects of the interaction of chemical compounds or drugs with biological systems. The principal pharmacological actions of several important drugs are illustrated. Mr. Truant and Staff.

300. READINGS AND RESEARCH IN BIOLOGY. Staff.

350. GRADUATE SEMINAR. Staff.

351a. SEMINAR IN ULTRASTRUCTURE. Not offered, 1963-64.
Discussion of the structure of macromolecules and organelles in relation to their biological functions. Evidence from a variety of physical and chemical methods will be included, with emphasis on electron microscopy. Hours to be arranged. Prerequisite: consent of the instructor. Staff.

360. MASTER'S THESIS. Staff.

390. DOCTORAL DISSERTATION. Staff.

Business Administration *(Division)*

DEPARTMENT FACULTY

F. Eugene Melder, Ph.D., *Professor of Economics*
George E. Hargest, M.B.A., *Associate Professor of Economics and Business Administration, Acting Director of Division of Business Administration*
Howard W. Nicholson, Ph.D., *Associate Professor of Economics*
George A. Balko, Jr., M.B.A., *Assistant Professor of Economics and Business Administration*
Frederick E. Bamford, M.B.A., *Assistant Professor of Economics and Business Administration*

UNDERGRADUATE PROGRAM

The Division of Business Administration presents and supervises a four-year course of study leading to the degree of Bachelor of Science in Business Administration. The program is given cooperatively by the departments of Economics and Sociology, English, History, Government and International Relations, Mathematics, Psychology and the Natural and Physical Sciences. General supervision of the program rests with the Director and the Administrative Committee representing the faculty.

For the special requirements for the degree of Bachelor of Science in Business Administration, see that section listed under degree requirements. Students should note that the following business administration courses may not be counted toward the degree of Bachelor of Arts: 104a, 152b, 154b, 172a, 174b, 176a, 202, 204b, 206, 253, 254b, 281b.

COURSES

Accounting

100. Principles of Accounting.
Organization and use of financial records with emphasis on interpretation as well as the techniques of procedure. Required of B.S. in B.A. degree candidates. Indivisible course. Staff.

102. Intermediate Accounting.
Accounting principles and procedures and their application to asset, liability and proprietorship accounts. Analysis of financial statements, including statements from incomplete data and the statement of application of funds. Emphasis is on problem analysis and solution. Indivisible course. Prerequisite: B.A. 100. Mr. Hargest.

104a. Federal Tax Accounting. Not offered, 1963-64
Legal and accounting fundamentals of federal income and social security taxes with emphasis on the preparation of returns. Prerequisite: B.A. 100.

202. Cost Accounting.
Basic principles of cost accounting as related to job order, process, estimated and standard cost systems. Cost for profit determination and for managerial control and decision-making are considered. Offered in alternate years. Prerequisite: B.A. 102 or consent of the instructor. Mr. Hargest.

204b. Auditing. Not offered, 1963-64
Analysis of the purpose and scope of the several classes of audits and discussion of professional ethics, auditing standards, internal control systems, audit procedures applicable to asset, liability and proprietorship accounts, and the use of worksheets and preparation of statements and reports. Prerequisite: B.A. 102.

206. Advanced Accounting. Not offered, 1963-64.
Theory and practice of accounting for branches, mergers, receiverships, estates and trusts, consolidated statements, budgets, municipal accounts, and other topics of advanced nature. Offered in alternate years. Prerequisite: B.A. 102.

Economics and Finance

Descriptions of these courses can be found in the announcement of the Department of Economics and Sociology.

ECONOMICS 11. PRINCIPLES OF ECONOMICS.
Required of B.S. in B.A. degree candidates.

ECONOMICS 13a. MONEY AND BANKING.
Required of B.S. in B.A. degree candidates.

ECONOMICS 13b. PROBLEMS IN MONEY AND BANKING.

ECONOMICS 15a. PUBLIC FINANCE.

ECONOMICS 140b. CONSUMER ECONOMICS.

ECONOMICS 21b. NATIONAL INCOME ANALYSIS.

ECONOMICS 22. LABOR ECONOMICS AND LABOR PROBLEMS.

ECONOMICS 24b. HISTORY OF ECONOMIC DOCTRINE.

ECONOMICS 25b. PROBLEMS IN PUBLIC FINANCE.

ECONOMICS 26. INDUSTRIAL ORGANIZATION AND GOVERNMENTAL CONTROL.

ECONOMICS 29a. ECONOMICS OF TRANSPORTATION.

ECONOMICS 205a. INTERMEDIATE ECONOMIC THEORY.

ECONOMICS 207. INTERNATIONAL ECONOMICS.

ECONOMICS 211b. COMPARATIVE ECONOMIC SYSTEMS.

ECONOMICS 231b. ECONOMIC HISTORY OF THE UNITED STATES.

120a. CORPORATION FINANCE. Not offered, 1963-64
Financial structure of modern industry with emphasis on the nature of the business corporation, its financial practices, types of securities, capital structure, financial reorganization, and the problems of internal financial control. Prerequisite: Economics 11. Required of B.S. in B.A. degree candidates. Mr. Nicholson.

121b. INTRODUCTION TO INVESTMENTS. Not offered, 1963-64
Principles underlying investment analysis and policy; salient characteristics of governmental and corporate securities; policies of investment companies and investing institutions, relation of investment policy to money markets and business fluctuations; security price-making forces, construction of personal investment program and exchange operation. Prerequisite: B.A. 120a. Mr. Nicholson.

Management and Personnel Administration

170b. PRINCIPLES OF MANAGEMENT.
The principles disclosed through a study of planning, organizing, directing, assembling resources and controlling which apply equally to all fields of administration. Required of B.S. in B.A. degree candidates. Mr. Bamford.

172a. INDUSTRIAL MANAGEMENT. Not offered, 1963-64.
A survey of the techniques of executive control of manufacturing operations with special reference to such fields as specialization of labor, expansion, control of factors of production and internal organization. Mr. Bamford.

176a. Production Management: Analysis. Not offered, 1963-64.
The problems of management in production are analyzed and the use of modern managerial decision-making processes are employed. Prerequisite: B.A. 170b. Mr. Bamford.

182b. Introduction to Personnel Management. Not offered, 1963-64.

184a. Management-Labor Relations. Not offered, 1963-64
Management-employee relationships with special reference to union and management bargaining. Opportunity for development of perspective and judgment regarding problems of management in shop industrial situations and labor relations law. Discussion and case methods are employed. Prerequisite: Economics 11. Mr. Melder.

191. Introduction to Quantitative Analysis for Business Decisions.
Some applications of the notions of probability and utility to the making of business decisions under conditions of certainty and uncertainty. First semester: Mr. Bamford.
~~Second semester: Mr. Balko.~~

271. Management: Decision-Making. Not offered, 1963-64.
Designed to describe quantitative methods which are useful in business decision-making, the course develops quantitative models and techniques of application. Prerequisite: B.A. 170b. Mr. Bamford.

272. Management Policies.
Actual problems of representative business concerns based on specific case studies. Administrative coordination, business research, business policies, development of master plans and operating budgets, measurement of administrative effectiveness. Prerequisite: B.A. 172a. Mr. Bamford.

273a. The Finance Function in Management.
The tools of financial analysis are developed and applied to the pertinent areas of planning, control and decision-making. The finance function in relation to other management functions will be emphasized. Prerequisite: B.A. 100 and B.A. 170b.
Mr. Bamford.

275a. Organization Theory. Not offered, 1963-64
Basic principles of organization with reference to promotion, formal and informal organization, departmentalization, line-staff relationships, decentralization and centralization, communication and the organization's bargaining relations with other organizations. Prerequisite: B.A. 170b. Mr. Bamford.

276~~a~~.b .Managerial Economics. ~~Not offered, 1963-64.~~
Economic concepts are analyzed and evaluated in terms of their applicability to the development of business policies. The criteria of usefulness are consistency of thought and measurability of the variables under consideration. Prerequisite: Economics 11.
Mr. Balko

290. Analysis of Business Problems.
The course is designed to integrate principles covered in specialized Business Administration courses bringing business as a whole and its economic problems into perspective. Required of all seniors in the Business Administration program. Indivisible course.
Mr. Balko.

Marketing

150a. PRINCIPLES OF MARKETING.
The efficiency, social implications and public control of the activities and practices of business institutions in effecting a flow of tangible commodities between producer and consumer. Required of B.S. in B.A. degree candidates. Mr. Balko.

152b. ADVERTISING MANAGEMENT. Not offered, 1963-64.
Advertising as a tool of marketing, economic functions of advertising, advertising research, media selection, advertising organizations and testing. Mr. Balko.

154b. RETAILING PRINCIPLES. Not offered, 1963-64.
The retailer in our economy, the store and its organizations, aspects of buying and selling, operating activities and personnel, and retail control. Offered in alternate years.

252a. MARKETING RESEARCH. Not offered, 1963-64.
Problems faced by business executives in marketing and the ways in which methods of scientific business research can be utilized for their solution. Prerequisites: Economics 11 and B.A. 160, or the equivalent. Offered in alternate years.

253b. SALES FORECASTING. Not offered, 1963-64.
Application of statistical procedure to the problems of predicting market demand and sales of the individual firm. Prerequisites: Economics 11 and B.A. 160, or the equivalent. Offered in alternate years.

254a. SALES MANAGEMENT.
The organization and direction of the efforts of a sales force, involving the establishment of a sales plan, placing the sales department in the company organization, formulating sales policies, organizing the sales department, recruiting, training, equipping, motivating and compensating salesmen, and measuring their performance. Prerequisites: B.A. 150a and B.A. 170b or their equivalent. Mr. Balko.

255b. MARKETING POLICIES.
Analysis of how competition, demand, cost, distribution structure and legislation affect marketing decisions of the individual company in regard to products, brands, channels of distribution, selling, advertising, sales promotion and prices. Prerequisites: Economics 11 and B.A. 150a or their equivalent. Mr. Balko.

Statistics

160. BUSINESS STATISTICS.
Statistical methods and techniques applied to data drawn from the business community. Includes sampling, statistical inference, estimation and decision-making, correlation—linear, multiple and curvilinear, analysis of time series and index numbers. Prerequisite: Mathematics 11. Required of B.S. in B.A. degree candidates. Indivisible course. Students ranking high in Mathematics 11 may, with the division director's consent, meet the requirement for B.A. 160 by taking Economics 29a. Mr. Hargest.

Honors

199b. JUNIOR HONORS PROGRAM.
Guided study for juniors planning to take B.A. 299 in their senior year. Staff.

299. Senior Honors Program.
Independent study of an approved topic for candidates for honors in accounting, management or marketing. Prerequisite: B.A. 199b. Staff.

Candidates for honors in economics should register for Economics 280b and Economics 28.

Chemistry

DEPARTMENT FACULTY

Thomas T. Sugihara, Ph.D., *Professor of Chemistry, Department Chairman*
Gerson Kegeles, Ph.D., *Professor of Chemistry*
Ralph I. Dorfman, Ph.D., *Professor (affiliate) of Chemistry*
William R. Nes, Ph.D., *Associate Professor of Biochemistry*
Edward N. Trachtenberg, Ph.D., *Associate Professor of Chemistry*
Myrna S. Pearson, M.A., *Assistant Professor of Chemistry*
Wen-Yang Wen, Ph.D., *Assistant Professor of Chemistry*
Allan M. Zwickel, Ph.D., *Assistant Professor of Chemistry*
Ernest Capstack, Jr., Ph.D., *Visiting Assistant Professor of Chemistry*

UNDERGRADUATE PROGRAM

In offering a variety of introductory courses in the major branches of modern chemistry, the department seeks to satisfy the needs and desires of (1) those interested in pursuing a career in chemistry, (2) those in related science areas, the proper understanding of which requires a background in chemistry, and (3) the non-scientists who want some knowledge of chemistry as part of their liberal education. In addition to these courses, a large number of more specialized subjects are treated in advanced courses.

The major program includes Chemistry 11, 13, 14a, 19, 190a, two semesters of chemistry electives, Physics 11 and Mathematics 12. Majors are further encouraged to acquire a reading knowledge of German and to take additional electives in mathematics.

Chemistry 11, a prerequisite to all other courses, need not be taken by students who demonstrate their proficiency through a departmental placement examination given in September. The other courses are normally taken in their numerical sequence, though some may be taken concurrently to permit completion of all but the elective courses by the end of the junior year. This leaves the senior year available for the more sophisticated courses and for independent research.

Any student may elect a chemistry major by the end of his sophomore year provided he has completed Chemistry 11. However, late entry into the program will limit the amount of advanced work open to the student.

The major program, accredited by the American Chemical Society, is designed to expose the student to the fundamentals of the major branches of chemistry preparatory to undertaking independent research. In the department's philosophy, worthwhile research is predicated upon a sound understanding of principles.

Since 1961, the National Science Foundation has made generous grants to the department which provide stipends for students electing to initiate or continue their research during the summer.

GRADUATE PROGRAM

The department offers programs leading to the degrees of Master of Arts and Doctor of Philosophy, with specialization in organic, inorganic, physical and nuclear chemistry, biochemistry, and chemical-physics.

Entering students must take a three-part written placement examination based on undergraduate inorganic and analytical, organic, and physical chemistry. The examination is normally given during the week prior to registration. Performance on this examination does not affect the student's standing but is used to assist in the planning of his program of studies.

Doctoral students must pass eight non-research courses including (except for those in the chemical-physics program) Chemistry 212a, 230a, 322a, 379b, and either 218a or 340a. The remaining courses are selected by the student in consultation with his research advisor and may include offerings in related departments. In addition, all students must take Chemistry 300 and complete a satisfactory master's thesis or doctoral dissertation. Students also participate in Chemistry 350 and 380 but there is no credit for these courses and tuition is not charged for them.

Doctoral students must meet the University language requirement of demonstrating a reading knowledge of German, French, Russian or Spanish. Students not satisfying the University requirement in German but who require it for their research may be asked to satisfy the department as to their proficiency in reading scientific German.

The chemical-physics doctoral program differs from other programs in three respects. The placement examination is not taken; physics requirements are substituted for some of the chemistry requirements; and thesis research is conducted in the Physics Department.

Graduate scholarships, teaching assistantships and research fellowships are available. An announcement offering detailed information concerning research facilities and graduate programs of study may be obtained by writing to the department chairman.

TRAINING PROGRAM FOR STEROID BIOCHEMISTRY

A Training Program for Steroid Biochemistry has been established at the University through the cooperation of the Department of Chemistry with the Worcester Foundation for Experimental Biology. Grants for the program are provided by the National Cancer Institute and the U.S. Public Health Service. Applications are invited for appointment as a postdoctoral fellow, from persons possessing Ph.D.'s, M.D.'s, or their equivalents. The appointment is for 12 months with a stipend of $5,500. Predoctoral appointments are also made in this program. Appointees who successfully complete the program will be awarded a certificate. Academic credit can be arranged for Chemistry 390. Fellows may be selected to remain for further work in biochemistry. Further information concerning the program will be supplied upon request to W. R. Nes, Program Director.

COURSES

11. General Chemistry.

Systematic study of the elements and their principal compounds and the fundamental laws and theories of chemistry. Three lectures and three laboratory hours per week. Laboratory fee. Prerequisite for all other courses in chemistry. Divisible with consent of the instructor. Mr. Zwickel, Mr. Wen.

13. ORGANIC CHEMISTRY.
Lectures on the principles of organic chemistry and a laboratory study of the preparation and properties of important organic compounds. Three lectures and three laboratory hours per week. Laboratory fee. Prerequisite: a grade of C— or better in Chemistry 11.
Mr. Trachtenberg.

14a. ANALYTICAL CHEMISTRY.
Theoretical and descriptive inorganic chemistry. Laboratory synthesis and analysis of simple inorganic systems. Three lectures per week for the first 10 weeks of the semester (none thereafter) and six laboratory hours per week throughout the semester. Laboratory fee. Prerequisite: Chemistry 11. Mr. Zwickel.

19. PHYSICAL CHEMISTRY.
Principles of physical chemistry applied to gases, liquids, solutions, crystalline solids; chemical thermodynamics, homogeneous and heterogeneous equilibria, electrolytic conductance and transference, electromotive force, reaction kinetics, colloids. Three lectures and three laboratory hours per week. Laboratory fee. Prerequisites: Physics 11, Math. 12; Chemistry 13, 14a, may be taken concurrently. Additional course work in mathematics is recommended. Mrs. Pearson.

116b. QUALITATIVE ORGANIC ANALYSIS.
One lecture and six hours of laboratory per week. Laboratory fee. Prerequisite: Chemistry 13. Mrs. Pearson.

280b. INSTRUMENTAL METHODS.
The principles and application of modern instrumental techniques to the separation and analysis of mixtures and for the characterization of pure compounds. Two lectures and six laboratory hours per week. Laboratory fee. Prerequisite: Chemistry 190a or consent of the instructor. Mr. Sugihara.

290a. ADVANCED PHYSICAL CHEMISTRY.
Elementary quantum-mechanical treatment of the structure of nuclei, atoms and molecules. Statistical mechanics of simple systems. Three lectures per week. Prerequisite: consent of the instructor. Mr. Sugihara.

212a. INORGANIC CHEMISTRY.
Correlation of physical and chemical properties with atomic structure and periodic classification. Descriptive chemistry of the elements. Mr. Zwickel.

214. SPECIAL PROJECTS.
Individual work of an investigative nature which may include a search of chemical literature as well as laboratory work. Staff.

215. HONORS COURSE.
Primarily for majors seeking departmental honors in chemistry. A laboratory research project. Staff.

218~~a~~. BIOCHEMISTRY.
Nature and probable origin of asymmetry. Composition of living systems. Correlation of composition with environment. Importance of carbon. Biochemical redox reactions. Acetate and other small molecules in biosynthesis. Krebs cycle. Biosynthesis of compounds containing nitrogen. Three lectures per week. Prerequisite: Chemistry 13.
Indivisible course. Mr. Nes.

218b. BIOCHEMISTRY.
Metabolism of isopentenoids. Structure, formation and role of nucleic acids, proteins and enzymes in living systems. Biosynthesis and further metabolism of carbohydrates. Energetics. Three lectures per week. Prerequisite: Chemistry 218a. Mr. Nes.

230a. PHYSICAL ORGANIC CHEMISTRY.
Fundamentals of organic chemistry. Molecular structure, acidity and basicity, kinetics and mechanisms with emphasis on the most recent advances in organic chemical theory. Mr. Trachtenberg.

300. RESEARCH. Staff.

321a. COLLOID CHEMISTRY. Not offered, 1963-64.
Osmotic and sedimentation equilibrium. Diffusion, sedimentation velocity, countercurrent distribution and chromatographic theory. Offered in alternate years. Mr. Kegeles.

322a. THERMODYNAMICS.
Applications of classical thermodynamics to chemical systems. Mr. Kegeles.

323b. STATISTICAL MECHANICS.
Statistical mechanical analogs of thermodynamic functions and their application to chemical systems. Prerequisites: Chemistry 322a and 340a, or their equivalents. Mr. Wen.

324b. REFRACTOMETRIC TECHNIQUES.
Applications of refractometric and interferometric methods to the study of optically inhomogeneous media. Methodology employed in electrophoresis, ultracentrifugation, diffusion and chromatography. Offered in alternate years. Mr. Kegeles.

331b. ADVANCED PHYSICAL ORGANIC CHEMISTRY.
Modern interpretation of organic reaction mechanisms including molecular rearrangements, chain reactions and other reactions not covered in Chemistry 230a. Prerequisite: Chemistry 230a. Offered in alternate years. Mr. Trachtenberg.

333b. SYNTHETIC ORGANIC CHEMISTRY. Not offered, 1963-64.
Lectures on synthesis of organic molecules emphasizing scope and limitations of general methods, mechanism and stereochemistry. Synthesis of carbon to carbon bonds, oxidation and reduction. Prerequisite: Chemistry 230a. Offered in alternate years.
Mr. Trachtenberg.

340a. QUANTUM CHEMISTRY I.
Elementary quantum mechanics of simple systems, properties of wave functions, approximation methods for complex systems. Mr. Sugihara.

341b. QUANTUM CHEMISTRY II. Not offered, 1963-64.
Atomic and molecular systems, interaction between atoms. Prerequisite: Chemistry 340a. Offered in alternate years. Mr. Sugihara.

342b. NUCLEAR AND RADIOCHEMISTRY.
Fundamentals of nuclear science; production, isolation, identification and measurement of radioactive atoms. Prerequisite: Chemistry 340a or Chemistry 190a. Offered in alternate years. Mr. Sugihara.

343b. THEORIES OF NUCLEAR-REACTION MECHANISMS. Not offered, 1963-64.
Current theories and models on mechanisms of nuclear reactions at medium and high

energies. Prerequisites: Chemistry 340a and 342b, or their equivalents. Offered at the discretion of the department. Mr. Sugihara.

350. SEMINAR.
Reports on research work and discussions of recently published work.
Guest Lecturers, Staff and Graduate Students.

360b. COORDINATION COMPOUNDS. Not offered, 1963-64.
Chemical and physical properties of complexes, including theories of coordination, stereo-isomerism, reaction mechanisms and solution stabilities. Mr. Zwickel.

361b. MOLECULAR STRUCTURE.
Physical methods relevant to the determination of the structure of molecules (x-rays, electron diffraction, nuclear magnetic resonance, electronic properties, etc.). Prerequisite: Chemistry 190a or consent of the instructor. Mr. Zwickel.

369a. ELECTRONIC SPECTROSCOPY.
Introduction to the studies of ultraviolet and visible absorption spectra as well as emission spectra. Prerequisite: consent of the instructor. Mr. Wen.

379b. SPECIAL TOPICS.
Research seminars; reports by graduate students.

380. RESEARCH CONFERENCE.
Informal reports of research work being done in the laboratory.
Staff and Graduate Students.

390a. STEROID BIOCHEMISTRY.
Specialized course in the biochemistry of the steroids. Lectures and Laboratory. Double course credit. Mr. Nes, Staff and Guest Lecturers.

Classics

DEPARTMENT FACULTY

Claude W. Barlow, Ph.D., *Professor of Classics, Department Chairman*

UNDERGRADUATE PROGRAM

Undergraduate courses are provided for the acquisition of a reading knowledge of Greek and Latin and for the study of literary masterpieces in those original languages. Courses are also offered for the candidate who wishes to major in Latin. The major should include Latin 13 during the freshman year, three advanced Latin courses and three courses in related fields to be approved by the department. Other courses, given entirely in English, deal with phases of the Greek and Roman civilizations. Students who wish to elect Elementary Greek or Intermediate Latin should consult the department as far in advance as possible since these courses are not offered every year.

COURSES

Greek

11. ELEMENTARY GREEK. Not offered, 1963-64.
Greek grammar through forms, syntax, vocabulary and reading; selections from Xenophon's *Anabasis* or other simple prose. Open to freshmen. Indivisible course. Mr. Barlow.

12. ATTIC GREEK PROSE; HOMER'S *Iliad*. Mr. Barlow.
Prerequisite: Greek 11.

13. GREEK DRAMA. Not offered, 1963-64.
Prerequisite: Greek 12 or the equivalent.

123a. GREEK CIVILIZATION.
Lectures, readings and discussion on the history, literature, art, religion and government of ancient Greece, with emphasis on the elements which have contributed most to Western civilization. Greek 123a may be counted with Latin 123b to fulfill the general degree requirement in art and music (Group D) but not in fulfillment of the requirement in foreign language. Mr. Barlow.

Latin

11. ELEMENTARY LATIN. Not offered, 1963-64.

12. INTERMEDIATE LATIN; VIRGIL'S *Aeneid*. Not offered, 1963-64.
This course will begin with an intensive review of forms, syntax and vocabulary for at least seven weeks. Prerequisite: two years of secondary school Latin. Offered in alternate years.

13. CATULLUS AND PLAUTUS; TERENCE AND HORACE. Not offered, 1963-64
Prerequisite: Latin 12 or three years of secondary school Latin. Mr. Barlow.

15. ROMAN HISTORIANS; POETS OF THE AUGUSTAN AGE. Not offered, 1963-64
Prerequisite: Latin 13.

17. ROMAN PHILOSOPHERS, ROMAN SATIRE. Not offered, 1963-64.
Mr. Barlow.

19. SURVEY OF LATIN LITERATURE. Mr. Barlow.

123b. ROMAN CIVILIZATION.
Lectures, readings and discussion on the history, literature, philosophy, art, religion, law and government of ancient Rome, with emphasis on the transmission of Greek civilization and the condition of the Roman Empire during the early years of Christianity. Latin 123b may be counted with Greek 123a to fulfill the general degree requirement in art and music (Group D) but not in fulfillment of the requirement in foreign language. Given in English. Open to freshmen. Mr. Barlow.

Comparative Literature

18. LITERATURE AND THE NATURE OF MAN.
The course is designed to serve the general student by providing him with an opportunity to investigate ideas held by outstanding literary artists of the Western World concerning the nature of man and his relation to the universe. The works are also to be studied as representatives of the cultures of which they are products. The course is planned not only to introduce the student to a body of knowledge and experience held in common by educated men and women in our society but also to help him to clarify his thinking concerning certain basic problems and to develop attitudes that are both

humane and creative. The subject matter undertaken includes Sophocles' *Oedipus the King,* the *Book of Job,* the *Inferno* from Dante's *Divine Comedy,* Shakespeare's *King Lear,* Milton's *Paradise Lost,* Moliere's *Misanthrope,* Goethe's *Faust,* Part I, and selected poems of T. S. Eliot. All non-English works are read in translation. Meets the requirement for a third semester of English in addition to English 11 but not the requirement in Fine Arts. Classified as a Group C course. Open to sophomores, juniors and seniors with the consent of the instructors. Successful completion of the first semester is normally required for admission to the second semester. Mr. Anderson, Mr. King.

ENGLISH 127b. MODERN CONTINENTAL DRAMA.
A survey of the drama of continental Europe, excluding England, from Ibsen to the drama of the absurd. Special emphasis will be given to the major figures, including Ibsen, Strindberg, Chekhov, Pirandello and Brecht. Offered in alternate years. Mr. Schroeder.

ENGLISH 145b. MODERN CONTINENTAL FICTION. Not offered, 1963-64.
Selected masterpieces by modern European novelists are studied closely in English translation, with attention to their philosophical, moral, social, political and psychological insights as well as to their literary forms. Writers considered include Flaubert, Turgenev, Tolstoy, Dostoyevsky, Gide, Proust, Mann, Kafka and Camus. Students are encouraged to read in the original languages when possible. Prerequisite: consent of the instructor. Mr. Beard.

GERMAN 170a. THE FAUST THEME IN LITERATURE.
See description under German. Mr. Arndt.

GERMAN 172b. THE GERMAN CONTRIBUTION TO WORLD LITERATURE.
See description under German. Mr. Arndt.

Economics and Sociology

DEPARTMENT FACULTY

Howard W. Nicholson, Ph.D., *Associate Professor of Economics, Department Chairman*
James A. Maxwell, Ph.D., *Professor of Economics*
F. Eugene Melder, Ph.D., *Professor of Economics*
George E. Hargest, M.B.A., *Associate Professor of Economics and Business Administration*
Frederick W. Killian, LL.B., *Associate Professor of Sociology*
Roger C. Van Tassel, Ph.D., *Associate Professor of Economics*
George A. Balko, Jr., M.B.A., *Assistant Professor of Economics and Business Administration*
Frederick E. Bamford, M.B.A., *Assistant Professor of Economics and Business Administration*
Philip G. Olson, Ph.D., *Assistant Professor of Sociology*

UNDERGRADUATE PROGRAM

The first aim of the department, in its undergraduate courses, is to give the student a comprehensive grasp of the underlying principles and functions of our economic and social institutions, and to develop habits of systematic and unbiased thought about these institutions. Some of the courses, however, contribute to the student's preparation for a business or professional career (Economics 13, 15, 22, 26, etc.) and are specifically recommended to students who are candidates for the degree of Bachelor of Science in Business Administration. Conversely, some students majoring in economics may be advised to elect certain courses in Business Administration which are credited toward the degree of Bachelor of Arts (Business Administration 100, 102, 120a, 121b, 150a, 160, 170b, 182b, 184, 252, 255b, 290).

Students who have an interest in Business Administration but prefer a program which is less intensive than that required of candidates for the degree of Bachelor of Science in Business Administration may enroll as candidates for the degree of Bachelor of Arts with a major in economics. Such students should take the normal college program. In the second year, they should elect Economics 11 and Business Administration 100. In the third and fourth years, they should select courses in economics and in business administration in consultation with their advisers.

Economics 11 is a prerequisite to all other courses in economics. Similarly, Sociology 11 is a prerequisite to other courses in sociology. Courses taken outside the department in partial fulfillment of the major requirement should be selected, subject to departmental approval, so as to provide a unified program centering about the student's major interest. Majors in economics will ordinarily be required to take Economics 105a, Intermediate Economic Theory.

Candidates for departmental honors will engage in a program of independent study consisting of reading and research designed in part to give them specialized training in the fields of their major interest and in part to supplement formal courses. Ordinarily a candidate will begin his honors work in the second semester of the junior year by enrolling in the Honors Seminar.

Courses in sociology will be found listed, with descriptions, immediately after the list of courses in economics.

In making elections, students should bear in mind that some advanced courses are offered only in alternate years.

GRADUATE PROGRAM

The program for the degree of Master of Arts is worked out individually with each student.

For the degree of Doctor of Philosophy, which may be taken in Economics, each student must choose six fields of study to be agreed upon as early as possible in the first year of residence beyond the M.A. A range of courses is offered in cycles of two or three years. Individual work with instructors constitutes a considerable part of the program.

The classification of courses as undergraduate, intermediate, and graduate is an elastic one. Graduate students of economics should regard certain courses in business administration as part of the offerings of the Department of Economics and Sociology.

COURSES IN ECONOMICS

11. Principles of Economics.
Indivisible course. Open to freshmen. Mr. Van Tassel.

105a. Intermediate Economic Theory.
An analysis of contemporary price theory. Mr. Van Tassel.

105b. National Income Analysis.
A study of contemporary income theory. Mr. Van Tassel.

13a. MONEY AND BANKING. Mr. Maxwell.

140b. CONSUMER ECONOMICS.
Theories of consumer choice making are analyzed. Rational planning and economy in important fields of consumers' decisions are explored. The role of government and private agencies in consumer education and protection are reviewed. Mr. Melder.

15a. PUBLIC FINANCE.
The principles of governmental expenditures, revenues, and debts, with particular reference to the United States. Mr. Maxwell.

BUSINESS ADMINISTRATION 100. ACCOUNTING.

BUSINESS ADMINISTRATION 102. INTERMEDIATE ACCOUNTING.

BUSINESS ADMINISTRATION 120a. CORPORATION FINANCE.

BUSINESS ADMINISTRATION 121b. INTRODUCTION TO INVESTMENTS.

BUSINESS ADMINISTRATION 150a. MARKETING.

BUSINESS ADMINISTRATION 160. BUSINESS STATISTICS.

BUSINESS ADMINISTRATION 170b. PRINCIPLES OF MANAGEMENT.

BUSINESS ADMINISTRATION 182b. PERSONNEL MANAGEMENT.

BUSINESS ADMINISTRATION 184. MANAGEMENT-LABOR RELATIONS.

200a. ECONOMIC GROWTH.
Analysis of economic growth theory, cultural, social and political factors making for growth. Factors within underdeveloped countries which hinder economic development will be examined. Mr. Melder.

200b. PROBLEMS IN ECONOMIC GROWTH.
The course examines some economic and social theories pertinent to economic growth. It then considers policy problems in two areas: acceleration of development rates in poorer countries and maintenance of growth in richer countries. Class members make studies of topics related to growth problems. Mr. Melder.

207a. INTERNATIONAL TRADE THEORY.
Emphasis is put on international value determination and the mechanisms for adjusting to international disequilibrium. Mr. Van Tassel.

207b. INTERNATIONAL ECONOMIC POLICY.
A review of the rise of the world trading economy, techniques of commercial policy, and major questions of international economic policy. Prerequisite: Economics 207a.
Mr. Van Tassel.

21a. BUSINESS CYCLES. Not offered, 1963-64.
Analysis of recurrent business fluctuations differentiating the typical business cycle and its phases. Treatment of the history, theories of causation and proposals for control of the business cycle.

210a. ECONOMIC AND SOCIAL REFORM. Not offered, 1963-64.
The development of economic institutions by society in its attempt to solve basic economic problems by free enterprise or planning. Attention is given to the contemporary industrial organization of the American economy.

211b. COMPARATIVE ECONOMIC SYSTEMS. Not offered, 1963-64
An analysis of contemporary or recently industrialized economic systems such as capitalism, socialism, and fascism, followed by a consideration of these systems as currently or recently found to exist in specific nations.

22~~a~~. LABOR ECONOMICS.
A survey of the nature of labor economics and labor problems, including the several approaches of organized workers and employers to these problems. Mr. Melder.

22~~b~~. LABOR ECONOMICS.
Applications of economic analysis to wages, unemployment, and related issues. The approach of government to labor force problems, including industrial relations and social insurance. Mr. Melder.

23b. PROBLEMS IN MONEY AND BANKING.
Central banks, particularly the Federal Reserve System; monetary standards; theories of foreign exchange; monetary policy in the United States. Prerequisite: Economics 13a or its equivalent. Mr. Maxwell.

231. ECONOMIC HISTORY OF THE UNITED STATES. Not offered, 1963-64.

24~~a~~b. HISTORY OF ECONOMIC DOCTRINE.
After a quick survey of ancient writers, attention will be given to mercantilism and the doctrinal reaction from it as expressed by the Physiocrats and the Classical economists.

25b. PROBLEMS IN PUBLIC FINANCE.
The Employment Act of 1946 is discussed and methods by which it may be implemented. Other questions examined are: reform of the federal taxation, federal debt policy, the capital budget, federal budgetary procedure. Prerequisite: Economics 15a or its equivalent. Mr. Maxwell.

26. INDUSTRIAL ORGANIZATION AND GOVERNMENTAL CONTROL.
Examination of the various forms of governmental regulation applied to our present industrial organization. Appraisal of existing governmental controls in specific industrial situations. Conducted on a seminar basis. Mr. Nicholson.

27b. INTRODUCTION TO MATHEMATICAL ECONOMICS.
An introductory survey of the use of mathematical methods in economic analysis. Special attention is given to the mathematical framework of the theory of price determination. Some attention will be given to special topics such as game theory and linear programming. Prerequisite: Mathematics 12 and consent of the instructor. Mr. Nicholson.

28. SENIOR HONORS. Staff.

280b. SENIOR HONORS SEMINAR.
Designed to assist honors candidates in integration of the field. Prerequisite for honors. Staff.

29a. STATISTICAL METHOD.
The nature of statistics; statistical description; statistical inference; special topics. Special emphasis will be given to theoretical and observed frequency distributions, elements of probability theory, problems of sample design and interpretation, decision theory, time series, index numbers, and measures of association and correlation. Mr. Nicholson.

Ordinarily required of all majors in Economics. With the approval of the Director of the Division of Business Administration, this half course may be substituted for B.A. 160, Business Statistics, by candidates for the degree of Bachelor of Science in Business Administration.

Business Administration 252. Marketing Research.

Business Administration 255b. Marketing Policies.

Business Administration 290. Analysis of Business Problems.

39a. Economic Theory.
Analysis of the theories of representative economists. Most attention is given to Marshall, Chamberlin, Keynes. Mr. Maxwell.

311. Seminar. Staff.

370b. Problems in Quantitative Economics.
Study of the application of mathematical and statistical techniques to economic problems. Mr. Nicholson.

300. Reading 30. Thesis	In Economic Growth.	Mr. Melder.
313. Reading 31. Thesis	In Money and Banking.	Mr. Maxwell.
322. Reading 32. Thesis	In Labor.	Mr. Melder.
324. Reading 33. Thesis	In Marketing.	Mr. Balko.
325. Reading 34. Thesis	In Public Finance and Fiscal Policy.	Mr. Maxwell.
326. Reading 35. Thesis	In Business Organization and Government Control of Industry.	Mr. Nicholson.
327. Reading 36. Thesis	In International Economics.	Mr. Van Tassel.
329. Reading 37. Thesis	In Statistical Methods.	Mr. Nicholson.
334. Reading 38. Thesis	In History of Economic Thought.	Mr. Maxwell.
339. Reading 320. Thesis	In Economic Theory.	Mr. Maxwell.

Sociology

UNDERGRADUATE PROGRAM

An undergraduate whose primary interest is in sociology may meet the department requirement for a major by completing four or five courses in sociology together with three or four approved courses in related departments. Related courses require departmental approval and must be discussed with advisers each registration day.

GRADUATE PROGRAM

A range of courses sufficient for the needs of candidates for the master's degree only is offered. Individual work with instructors and small intimate seminars constitute a goodly part of the graduate student's program.

COURSES IN SOCIOLOGY

11a. PRINCIPLES OF SOCIOLOGY.
The development of man's world—the social, the normative, structure and function, some fallacies in sociological thinking, social action and interaction, social change and planning. Essential for sociology majors. Open to freshmen. Mr. Olson.

11b. SOCIAL INSTITUTIONS.
The major social institutions of the Western World—kinship, political-legal, religious, economic, educational, science as an institution, military, their development, control functions and their relation to the individual. Social change, structure and function and ideological factors. Prerequisite: Sociology 11 or consent of the instructor. Open to freshmen. Mr. Killian.

12a. HUMAN EVOLUTION.
The evolution of man as a biological organism and the development of man's distinguishing feature: culture. The assessment of paleontological and archaeological evidence in an attempt to reconstruct the evolution of man and his culture. The use of comparative anatomy and genetics in understanding human evolution; a survey of existing theories of evolution. The reconstruction of human culture from the stone age to the Christian era: emphasis placed largely on the Middle East, Egypt, Crete, Mesopotamia, and Europe. Prerequisite: Sociology 11a, or consent of the instructor. Mr. Olson.

12b. SOCIAL ANTHROPOLOGY.
An analysis of primitive society with emphasis on social structure, including religion, kinship and economics. The relation between culture and personality and the processes of social change in the primitive world are explored. Mr. Olson

13a. INDIVIDUAL AND SOCIAL STRUCTURE. Not offered, 1963-64.
An examination of the social contexts out of which personality types emerge; the development of the social mind and self; theories of interpersonal behavior and the presentation of self; the relation between individual behavior and social structures. An analysis of the role of history, society, and psychological factors in the development of personal identity and other components of the self, including anxiety, social personality, and character. The readings will emphasize both primitive society and the modern Western world. Prerequisite: Sociology 11. Mr. Olson.

15a. POLITICAL SOCIOLOGY.
An anthropological and sociological analysis of political institutions in the Western World. Emphasis on social change and social control. Prerequisite: Sociology 11 or consent of the instructor. Mr. Killian.

16a. SOCIAL CONTROL, POWER AND POLICY. Not offered, 1963-64.
A sociology course, stressing the phenomenon of power and authority in non-government and non-legal institutions, namely, industry, family, education, bureaucracy and other institutional areas, with backgrounds in Western Civilization but with emphasis on the United States. It will deal with the relations between policy-making and human responses for purposes of order in society as related to power and authority in the setting of social institutions with reference to values, status, role, stratification, means and ends, and in the social order. Mr. Killian.

21b. SOCIOLOGICAL ANALYSIS. Not offered, 1963-64.
The philosophical and logical premises underlying the collection and interpretation of empirical data and the extension of these to sociological contexts. A brief survey of the major styles of quantitative social investigation will be made: research design, survey analysis, logic of quantitative measurement techniques, and the questionnaire. Somewhat more time will be spent on community study and participant-observer techniques with an attempt to relate the qualitative data which come from these styles to quantitative data. The emphasis will be on understanding the social world by combining and interpreting the utility and fallacies of investigatory styles. Prerequisite: Sociology 11. Mr. Olson.

24a. THE COMMUNITY.
An analysis of community studies as the basis for understanding society, with particular reference to American society. The community as a form of social organization with psychological, political, and economic underpinnings. The rise of centralized institutions and the transformation of community in twentieth century America: the links between community social structure and the total society. The historical decline of community and the emergence of pseudo-communities. The course will focus on a comparative analysis of the major American community studies. Prerequisite: Sociology 11. Mr. Olson.

25. LAW AND SOCIETY.
First semester: Law, the social order, power and control. The basis of the legal order and legal institutions. Second semester: The problem situation, change and current legal problems. Prerequisite: first semester must be taken in order to register for the second semester and consent of the instructor. Mr. Killian.

26b. URBAN CULTURE.
The growth and development of urbanism in Western Civilization and its impact on civilization. An analysis of the complexities of urban life; the structural components and varieties of life styles found in American cities. The impact of urbanism on American society. Offered in alternate years. Prerequisite: Sociology 11 and one additional semester of sociology. Mr. Olson.

27. SOCIAL ORGANIZATION. Not offered, 1963-64.
Analysis of social stratification with a particular reference to American society. The social and economic basis of stratification, life styles, power, social mobility. Bureaucracies in American society as a special type of stratification embodying particular idealogical and organizational patterns. Indivisible course. Offered in alternate years. Prerequisite: Sociology 11. Mr. Olson.

28. HONORS AND SPECIAL READINGS. Staff.

29. SOCIAL THOUGHT AND SOCIOLOGICAL THEORY.
The development of man's thought about society; the philosophical basis of social thought and sociological theory; current sociological theory. Both semesters required for sociology majors. Prerequisite: Sociology 11, or consent of the instructor. Mr. Killian.

38. READINGS AND RESEARCH IN SOCIOLOGY. (Graduate Students) Staff.

267b. CONTEMPORARY SOCIOLOGICAL ISSUES.
A course for advanced undergraduate and graduate students. Prerequisite: consent of the instructor. Mr. Olson.

Education

DEPARTMENT FACULTY

Vernon Jones, Ph.D., *Professor of Educational Psychology, Department Chairman*
Henry C. Borger, Jr., Ph.D., *Professor of Education*
James M. Coffee, Ed.D., *Associate Professor of Education*
Joseph C. Bentley, Ph.D., *Assistant Professor of Education*
Dayton D. Shepherd, A.M., *Lecturer in Education*
M. Evelyn Harriman, A.M. in Ed., *Lecturer in Education*

With the cooperation of Professor Warman of the Graduate School of Geography, Professor Beck of the Department of Philosophy, Professor Reid of the Department of Romance Languages, Miss Hughes, Dean of Women, and visiting lecturers in special areas.

UNDERGRADUATE PROGRAM

The department encourages all students who may be interested in preparing for teaching to consult with some member of its staff as early in their careers at the university as convenient. The actual election of courses in education, however, should be postponed until the junior year. During the first two years, students should complete as many of the specific requirements for the degree of Bachelor of Arts as possible, and lay a broad foundation of scholarship in the subjects in which they wish to teach.

In conformity with its policy of emphasizing the importance of scholarly background in the preparation of teachers, the department offers its courses as electives, and not as an undergraduate major. This means that the students preparing to teach should elect their majors with careful attention to extensive preparation in areas in which they wish to teach.

Education courses at the undergraduate level are offered primarily with two purposes in mind: (1) to provide introductory instruction to students who plan to teach in secondary schools and academies, and who, in preparation for such teaching, plan a fifth year of study leading to the degree of Master of Arts in Education; and (2) to provide an integrated program of courses and internship teaching to students who, immediately upon graduation, wish to teach in elementary schools.

For students desiring to enter elementary school teaching immediately upon receiving their undergraduate degree, a program has been evolved, in cooperation with the faculty, whereby the election of at least 18 semester hours in education may be possible, including internship teaching in the first semester of the senior year. Since the amount of professional work in education forms so large a percentage of the program of study of such students in the junior and senior years, it is obvious that careful planning must be done throughout the college course to have the desired number of electives available for work in education in these last two years.

GRADUATE PROGRAM

The graduate program in education consists of two parts: a program leading to the degree of Master of Arts in Education and a new program, established in 1962, leading to the degree of Doctor of Education.

Master of Arts in Education: For graduate students wishing to prepare for teaching and/or guidance in secondary or elementary schools and academies, the department offers a fifth-year program leading to the degree of Master of Arts in Education. The program includes additional work in the student's subject-matter field, courses and seminars in education and supervised internship teaching.

Admission Requirements: In addition to the general admission requirements to the Graduate School, a personal interview is usually required by the Department of Education. Since scholarships are usually not available for the first semester to students applying for the Master of Arts in Education as a terminal program, the department is liberal in its policy concerning the date when applications will be considered.

Programs Available: Four programs leading to the degree of Master of Arts in Education are available:

1. A full-time program for students with a bachelor's degree and strong academic background. Superior students may complete this program in one year. It includes appreciable advanced work in the academic field in which the student plans to teach, and internship teaching as well as graduate courses in education.
2. A program of part-time study for teachers in service.
3. A study-teach program for specially selected applicants involving alternate semesters of full-time study and paid employment as a teacher. This is a two-year program and the teaching is a part of the requirements of all students in this study-teach plan.
4. A study-teach program in cooperation with the Department of Romance Languages, involving instruction in beginning college courses. This is a two-year program in which the student typically receives a Teaching Assistant Scholarship involving remission of tuition and a cash stipend. In this program 20 hours per week are required in supervised teaching in the Department of Romance Languages. In light of the extensive internship teaching experience in this program, the number of courses in education may be reduced to equal that in the subject matter field. The assisting or teaching is a part of the requirements of all students in T.A.S. Program. As part of the study of Romance languages and literature, the departments look with favor on study abroad for at least one summer, but this is not a requirement.

Course Requirements. The student is expected to elect one of the following groups of studies as the field in which he wishes to teach:

(a) Mathematics and natural sciences.
(b) History, geography, and government.
(c) Ancient and modern foreign languages.
(d) English, alone or in combination with some related subject.

Prior to receiving the degree, the candidate must have completed in undergraduate and graduate study combined not less than five year-courses in one of the above groups, or in a combination of groups approved by the Department of Education. At least two semester-courses in a subject-matter field must be taken as a part of the study in residence for the advanced degree and must be passed with a grade of B— or better for graduate credit. In addition to the above requirement in the subject-matter field, eight semester-courses of graduate work in education will normally be required. The program of courses to meet these requirements must be approved in advance by the department. Changes in the proportion of education and subject-matter courses may be made by the department on the basis of the candidate's previous training. Work, additional to the above requirements, either in the subject-matter field or in education, or both, may be required if this seems necessary for the adequate preparation of the candidate.

Internship Teaching. The department provides opportunities for internship teaching under supervision for all graduate students majoring in education. For graduate students of the department who have not had teaching experience, satisfactory work in internship teaching is a requirement for the degree of Master of Arts in Education.

Thesis or Additional Study in Lieu of Thesis. All candidates for the degree of Master of Arts in Education must choose one of the following plans:

(a) Prepare an acceptable thesis or special report.

(b) Elect, in lieu of thesis, two additional semester courses in subject-matter fields (making a total of at least four-semester courses in subject-matter area).

(c) Elect, in lieu of thesis, a double seminar in which intensive work will be required in preparing and presenting reports before fellow graduate students and the staff.

Final oral examination. The passing of a final oral examination will be required of all candidates.

Doctor of Education: The program for the degree of Doctor of Education was established in 1962 and is being organized and developed gradually, with special emphases on educational psychology, guidance and counseling. The requirements for this degree will closely parallel the requirements for the Doctor of Philosophy degree, as outlined in the catalog section on the Graduate School. Applicants for admission to the program will be expected to satisfy all requirements mentioned for the Doctor of Philosophy degree and, in addition, to submit results on the Graduate Records Examination. In special cases, foreign students may be excused from the Graduate Records Examination requirement.

COURSES

201a. EDUCATIONAL PSYCHOLOGY: CHILD GROWTH AND DEVELOPMENT.
Principles of child development, with special emphasis upon maturation, learning and personality development in the elementary school years. Mr. Bentley.

207b. USE OF AUDIO-VISUAL MATERIALS IN TEACHING.
Principles and practices in the use of visual and auditory material and community resources in teaching. Laboratory work required and a fee of $8.00 charged for material. Mr. Borger.

208a. METHODS AND MATERIALS IN SECONDARY EDUCATION.
Methods and techniques used by the teacher in junior and senior high school teaching, and a survey of materials available. Prerequisite: consent of the instructor. Mr. Borger.

210b. PSYCHOLOGICAL APPROACH TO CITIZENSHIP DEVELOPMENT. ~~Not offered, 1963-64~~.
A study and evaluation of the theoretical formulations and experimental evidence on the problem of values as they relate to character and citizenship development among children and adolescents. Attention will be given both to activities in the schools and to other institutions and agencies in the community as they relate to values and conduct of youth. Prerequisite: consent of the instructor. Mr. Jones.

215a. Internship Teaching in the Elementary School. (With Seminar)
An extended period of observation and practice in teaching under supervision in regularly organized classes in elementary school. Each student is assigned to a supervising teacher, under whom he or she works for 180 hours during the semester. The first week of this period is normally devoted to observation; the remainder of the time to teaching, under supervision. Lesson planning, pupil evaluation, and supervision of pupils in non-class activities are part of the requirements of each student. Prerequisite: consent of the department. (Double course) Mr. Jones, Mrs. Harriman and Supervising Teachers.

20b. (Geography 200b.) Geography in Education. Not offered, 1963-64
Geography in the present-day American schools. The course is designed to meet the needs of those expecting to teach geography. Mr. Warman.

27b. Principles of School and Recreational Leadership. Not offered, 1963-64
The basic concepts and techniques of educational and recreational leadership. Lectures, readings, discussions, and field work. Permission of the instructor required for registration. Miss Hughes.

263a. Methods and Materials in Teaching of Language Arts in the Elementary School.
Methods and materials in the teaching of the language arts, in the middle grades, with special reference to reading. Particular emphasis will be given to provision for individual differences in teaching, and to the development of independent study skills. Field trips to selected schools will be arranged. Prerequisite: consent of the instructor. Mr. Shepherd.

260b. Curriculum Development in Elementary Education.
A study of the most essential materials and methods in elementary school instruction. Special attention will be given to the methods of teaching and learning in the social studies and mathematics, with brief units on the methods of cooperating most effectively with special teachers in the arts. Lectures and demonstrations by visiting specialists will be provided on particular topics, and field trips will be arranged for classroom demonstrations of certain principles and procedures. Prerequisite: consent of the instructor. Mr. Shepherd.

270. (Romance Languages 270) The Teaching of Romance Languages.
A practicum course for Teaching Assistant Scholars serving as Interns in the Department of Romance Languages. This course will include a weekly lecture and readings, to provide a basis in the theory of applied linguistics; directed teaching in language courses; and a monthly seminar for discussion of the relations between theory and practice. Mr. ~~Reid and Staff~~ Rubin

290b. Philosophy of Education.
The aims, processes and materials of education with special reference to the influence of philosophical ideas on educational problems. Mr. Beck.

301a. Educational Psychology: Adolescent Growth and Development.
Principles of learning and of personality development at the adolescent level. Major emphasis will be upon implications of normal adolescent growth and development for teaching and guidance. Mr. Jones.

303b. Curriculum Development in Secondary Education. Not offered, 1963-64
The basic objectives, issues, principles and procedures of curriculum organization and

development in secondary schools, including the organization of learning experiences in reference to developmental and subject-matter sequences.
Mr. Borger and Visiting Specialists.

305a. EDUCATIONAL SOCIOLOGY.
A study of social phenomena and their relationships to education. Mr. Bentley.

305b. GROUP PROCESSES IN EDUCATION AND GUIDANCE.
Principles of group interactions as they relate to education. Influence of culture and society upon teaching and counseling will be considered. Mr. Bentley.

307a. PERSONALITY DEVELOPMENT IN TEACHING AND COUNSELING.
The role of personality theory and development in counseling and education with emphasis upon those theories which relate to the counseling process. Mr. Bentley.

307b. SOCIAL BEHAVIOR AND THE DEVELOPMENT OF PERSONALITY.
Psychological, social and cultural bases of personality development as they relate to teaching and counseling. Mr. Bentley.

309b. SOCIAL LEARNING IN RELATION TO TEACHING AND COUNSELING.
The purpose of this course is to consider concepts of learning which contribute to an understanding of the development of social behavior. Principles of learning and teaching from the fields of social psychology and sociology will be studied within the context of the social environment. Mr. Coffee.

310b. CITIZENSHIP DEVELOPMENT: SEMINAR. Not offered, 1963-64
Readings and reports. Offered in alternate years. Mr. Jones.

311a. PRINCIPLES, PRACTICES, AND ORGANIZATION OF GUIDANCE.
A survey of guidance and personnel work. Principles bearing upon guidance and student personnel practices will be developed. Aspects of related fields will be reviewed sufficiently to indicate the scope and content of guidance and personnel work. The problem of organizing and administering a guidance program will form an important part of this course. Mr. Coffee.

312a. GUIDANCE: COUNSELING.
Emphasis in this course will be upon the theory and methodology of counseling and upon the management of typical counseling problems. The diagnosis and referral of behavior disorders and related personality maladjustments will be considered. Case material will be presented and analyzed. (311a must be taken simultaneously or have been taken previously.) Mr. Coffee.

312b. GUIDANCE: OCCUPATIONAL INFORMATION AND PLACEMENT.
The first part of this course will contain instruction and training in the use of occupational information in vocational guidance along with a consideration of the psychological and sociological factors related to occupational choice and job satisfaction. The second part will emphasize the organization of the placement service. Mr. Coffee.

314a. TESTS AND EVALUATION.
The methods and problems involved in the evaluation of abilities, interests and achievement of children and youth. Attention will be given both to standardized instruments and to teacher-made tests of achievement. Mr. Jones.

314b. Tests and Evaluation: Advanced Problems.
The measurement and evaluation of aptitudes, attitudes, and personality with attention to the use of such measures in teaching and counseling. Mr. Jones.

315a. Internship Teaching in the Secondary School.
An extensive period of observation and teaching in the field or fields in which the student plans to teach in secondary school. Individual supervision is given by the department and by critic teachers in cooperating schools.
Mr. Jones, Mr. Bentley and Supervising Teachers.

318b. Individual Psychological Assessment in Guidance and Counseling.
Mr. Bentley and Visiting Specialists.

319a. Statistical Methods in Educational Evaluation and Research I. Mr. Jones.

319b. Statistical Methods in Educational Evaluation and Research II. Mr. Jones.

322.b, Practicum in Guidance.
Offered in alternate years. Mr. Coffee.

325. Advanced Practicum and Seminar in Guidance and Counseling.
Offered in alternate years. Mr. Coffee and Visiting Specialists.

350. Research in Education.
Individual direction of students in their research projects. Staff.

380b. Departmental Seminar on Current Problems. Staff and Graduate Students.

English

DEPARTMENT FACULTY

Karl O. E. Anderson, Ph.D., *Professor of English, Department Chairman*
James F. Beard, Jr., Ph.D., *Professor of English*
Charles S. Blinderman, Ph.D., *Associate Professor of English*
William H. Carter, Jr., Ph.D., *Associate Professor of English*
Stanley Sultan, Ph.D., *Associate Professor of English*
Jessie C. Cunningham, A.M., *Assistant Professor of English*
Neil R. Schroeder, Ph.D., *Assistant Professor of English*
Serena S. Hilsinger, A.B., *Lecturer in English*
Elizabeth S. Toscano, Instructor in English, 1st semester

UNDERGRADUATE PROGRAM

All freshmen must take English 11 except those exempted from one or both semesters on the basis of the College Entrance Examination Board Advanced Placement Test or the Special Placement Test given by the Department of English. The requirement of a third semester of English may be satisfied by any English course beyond English 11 with the exception of English 12a and 19b.

A major in English consists of a minimum of four English courses beyond English 11 and three related courses, as follows:

1. English 13a and either English 14 or 15. Normally these courses should be taken in the sophomore year.
2. English 150b and three other half-courses in English from a group of courses open only to juniors and seniors, namely: 101b, 104, 105, 110, 117, 122b, 130a, 146b and 155b.

3. Related courses: History 10; one year in philosophy, preferably Philosophy 12; and one other course approved by the department, preferably from the following list: Fine Arts 11, Linguistics 115, French 113, German 141, Greek 123a, History 12, History 230, Latin 123b, Music 12 and Philosophy 19b.

The Honors Program in English, which offers an opportunity for extensive independent work during the junior and senior years, is open to qualified students upon application to the department.

Students who expect to do graduate work in English are strongly advised to acquire a reading knowledge of French, German and Latin.

COURSES

11. Composition and Literature.
English 11 aims (1) to improve the student's composition through a review of the principles of good writing, frequent themes, and individual conferences and (2) to enable him, through the techniques of close reading, to comprehend and enjoy literature. Open to freshmen. Staff.

12a. Speech.
A fundamental course in speech, including training and practice in voice production, diction, articulation, and the basic types of speech. Drill sessions and recordings help the student recognize and correct his speech deficiencies. Practice in public speaking includes practical experience in the most common types of speeches. Open to freshmen. Prerequisite: consent of the instructor. Mr. Schroeder.

13a. Introduction to Poetry.
A course introducing the student to a variety of critical approaches to poetry and affording extensive experience in reading, discussing and writing about individual poems. Attention is given to as many as possible of the chief kinds, functions and values of poetry. Mr. Carter.

14. English Novel.
A study of the English novel from its beginning to the end of the nineteenth century. The first semester includes Defoe, Richardson, Fielding, Smollett, Sterne, Jane Austen and three or four minor novelists. The second semester considers Scott, Thackeray, Dickens, George Eliot, Hardy, Conrad and three or four minor novelists. Some emphasis is placed on the development of the novel as a literary form. Mrs. Cunningham.

15. English Drama.
A course in theatrical techniques and the literature of the major periods of drama in the English language. The first semester covers the religious drama of the Middle Ages and the drama of Tudor, Stuart, and Restoration England, including plays by Marlowe, Shakespeare, Jonson, Beaumont and Fletcher, Dryden, Congreve and Wycherley. The second semester covers eighteenth and nineteenth century English drama and the modern drama of England, Ireland and the United States. Included are plays by Sheridan, Goldsmith, Wilde, Shaw, Synge, Yeats, O'Casey and O'Neill.
First semester: Mr. Schroeder.
Second semester: Mr. Sultan.

16~~a~~. Creative Writing.
A course designed to cultivate and guide student work in the short story, the lyric poem,

ENG.103B THE COMIC SPIRIT MR. CARTER

and the informal essay. Class meetings deal largely with important aspects of the art of fiction; published literary works and student manuscripts are discussed. Prerequisite: a one-semester course in literature, which may be taken concurrently. Mr. Sultan.

19b. INTERMEDIATE COMPOSITION.
Through the study and application of rhetorical methods, this course is designed to assist students to improve their expository writing. Diction, sentence structure, paragraph integrity, theme organization, logic, semantics, persuasion, the relationship of idea to expression and of expression to audience are among the matters analyzed.
Mr. Blinderman.

101a. CHAUCER. Not offered, 1963-64.
After a careful study of the Prologue to the *Canterbury Tales* to acquaint the student with the essentials of Middle English vocabulary, grammar and scansion, most of the *Canterbury Tales* and all of *Troilus and Cressida* are read more rapidly. The emphasis throughout is on Chaucer's literary skill and breadth of vision. Offered in alternate years.
Mr. Anderson.

104. MILTON AND THE SEVENTEENTH CENTURY.
The first semester is devoted to a study of seventeenth century English literature exclusive of Milton and the Restoration Drama; that is, metaphysical poets (Donne, Herbert, Vaughan); the seventeenth century lyric (Jonson, Herrick, Crashaw, Marvell); prose works by Bacon, Burton, Browne, Walton, Bunyan, Pepys and Evelyn; and in general, the rise of neo-classicism (Jonson, Hobbes, Dryden). The second semester considers in some detail the works of Milton and the Restoration Drama (Dryden, Etherege, Wycherley, Congreve, Farquhar). Offered in alternate years. Mr. Carter.

105. EIGHTEENTH CENTURY. Not offered, 1963-64.
During the first semester, prose works such as Defoe's *Moll Flanders* and Swift's *Gulliver's Travels,* plays such as Gay's *Beggar's Opera* and Lillo's *London Merchant,* and the major poems of Pope and Swift are considered. During the second semester, prose works by Boswell and Johnson; novels by Richardson, Fielding, Smollet, Sterne; plays by Fielding, Goldsmith, Sheridan; and poetry by Thomson, Collins, Gray, Burns and Blake are studied. Offered in alternate years. Mr. Carter.

110. VICTORIAN LITERATURE.
A survey of Victorian literature through the major movements and figures of the age. In the first semester, Carlyle, Macauley, Mill and Newman are studied as representative spokesmen of prevailing ideological movements, such as Transcendentalism, Utilitarianism, Anglo-Catholicism; Tennyson and Browning are the major poets studied. In the second semester, the movements include Darwinism, Aestheticism and Imperialism; Huxley, Arnold, Pater, Ruskin, Wilde and Hardy are among the authors read. Offered in alternate years. Mr. Blinderman.

111. AMERICAN LITERATURE.
Through study of representative masterworks, the course traces the main currents of American literature from Puritan times to the present. Authors read during the first semester include Sewall, Edwards, Franklin, Cooper, Poe, Hawthorne, Thoreau, Emerson, Melville and Whitman; during the second semester, Twain, Howells, Dickinson, Adams, Crane, James, Frost, Eliot, Faulkner and Hemingway. Second semester only will be offered in 1963-64. Mr. Beard.

113. Shakespeare.
Approximately twenty plays, with supplementary critical essays, are read through the year as a basis for a study of Shakespeare's development as a dramatist and his changing attitude toward life. The second semester is devoted mainly to a careful analysis of *Hamlet, Othello, Lear, Macbeth* and *Antony and Cleopatra.* Mr. Anderson.

117. Romantic Literature. Not offered, 1963-64.
Survey of the historical background of Romanticism and depth-study of the aesthetic significances of Romantic poetry and prose. First semester: selections from pre-Romantic poets, philosophers and Gothic novelists, with concentration on Romantic poets Blake, Wordsworth and Coleridge. Second semester: Romanticism in the works of Byron, Keats, Shelley and contemporary essayists. Offered in alternate years. Mr. Blinderman.

122b. Modern Poetry. Not offered, 1963-64
A course in English poetry during the forty-year period from the First World War to the death of Dylan Thomas and Wallace Stevens, with brief consideration of the precursors of the period. Yeats, Pound, Eliot, Auden, Frost, Stevens and Thomas are the principal poets studied. Offered in alternate years. Mr. Sultan.

127b. Modern Continental Drama.
See description under Comparative Literature. Mr. Schroeder.

130a. English Seminar.
This seminar is devoted to the intensive study of a special subject or a small group of writers. It is limited to advanced students who are capable of independent work. Prerequisite: consent of the instructor.

Topic for 1963-64: Darwinism. This seminar, of an interdisciplinary nature, is devoted to the study of original and research materials elucidating the scientific, philosophical, religious and social dimensions of Darwinism. The course examines chiefly the survival of the fittest Darwinian ideas in English and American literature. Mr. Blinderman.

143a. Modern British Fiction.
The course deals primarily with the work of the four major British writers of fiction during the twentieth century: Conrad, Lawrence, Woolf and Joyce. Offered in alternate years. Mr. Sultan.

144b. Contemporary American Fiction.
A critical introduction to the best American fiction since about 1900, with emphasis on its aesthetic values, sociological insights, and philosophical implications. Authors read include Dreiser, James, Anderson, Fitzgerald, Hemingway, Wolfe, Faulkner and Mailer. Offered in alternate years. Mr. Beard.

145b. Modern Continental Fiction. Not offered, 1963-64.
See description under Comparative Literature. Mr. Beard.

146b. Introduction to Literary Criticism. Not offered, 1963-64.
This course involves the discussion of a selection of critics, from Aristotle to the present, who have been particularly influential in English and American literature. Offered at the discretion of the department. Mr. Carter.

150b. Senior Survey.
This seminar seeks to help the senior major integrate his other English courses and to fill in any significant gaps in his English program. The reports and discussions trace, from

early writing to the present, such concepts as Classicism, Romanticism, Realism and Naturalism, Tragedy, Comedy, Satire and Humanism. Required of departmental majors. Mr. Anderson.

155b. Junior Honors Seminar. Not offered, 1963-64
Restricted to juniors who are candidates for honors in English. The purpose of the seminar is to prepare the student for the advanced independent study of literature. It comprises such subjects as the definition of genres, the nature of metaphor, alternative critical approaches to literature and the editing of texts. Mrs. Cunningham.

Fine Arts DEPARTMENT FACULTY

Samuel P. Cowardin, Ph.D., *Associate Professor of Fine Arts*
Sante Graziani, M.F.A., *Associate Professor (affiliate) of Fine Arts*

UNDERGRADUATE PROGRAM

The major in fine arts is offered jointly by Clark University and the School of the Worcester Art Museum. The program consists of 13 courses taken at Clark and seven courses at the museum school. Fine Arts 11 and History 10 are required among the university courses.

Candidates for admission who wish to major in fine arts must submit, with their application form, a portfolio of about a dozen representative pieces of their work in drawing, painting, design, etc. Each piece should be clearly marked with the candidate's name and home address.

COURSES

11. Introduction to Western Art.
Lectures during the first four weeks deal with general topics, such as design principles and technical procedures. The remainder of the course treats significant works of architecture, sculpture and painting in the light of their times. New students will not be admitted in the second semester. Mr. Cowardin.

111. Basic Drawing and Painting.
Introduction to the drawing and painting of objects in the field of vision; theory and practice in the statement of line, form and light and shade; study of the nature and use of materials and instruments; exercises from objects and from living models; observation of method and accomplishment found in the museum's collections. Nine hours of studio work a week at the museum school. Indivisible course. Mr. Graziani and Staff.

12b. Survey of Western Painting.
General problems of pictorial expression are treated as well as the historical aspects of style. The course may not be counted in addition to Fine Arts 11.

15. Art of the Renaissance in Italy. Mr. Cowardin.

16. Art of the Seventeenth and Eighteenth Centuries. Not offered, 1963-64.

191a. Art of the Ancient Near East and India. Mr. Cowardin

192a. Art of China and Japan. Not offered, 1963-64.

199. Advanced Painting and Design.
General designation for all courses at the museum school above the elementary level. Ordinarily open only to majors in the practice of art. Staff of the Museum School.

Freshman Orientation Course

ORIENTATION. A required non-credit course for freshmen. Two periods per week are required for most of the first semester. Additional class periods are planned during the second semester to discuss the selection of a major field of study.

Topics include the history and nature of the university; liberal and vocational education; the curriculum; the individual in relation to the institution, the staff, and fellow students; the library; reading, note taking; methods of study; examinations; and the physiology of sex.

GENERAL ORIENTATION	Dean Borger, Dean Hughes.
PHYSIOLOGY OF SEX	Dr. Deering.

Geography

DEPARTMENT FACULTY

Raymond E. Murphy, Ph.D., *Professor of Economic Geography, Director of Graduate School of Geography*
Samuel Van Valkenburg, Ph.D., *Professor of Geography, Emeritus*
Henry J. Warman, Ph.D., *Professor of Geography, Secretary of Graduate School of Geography*
Roland J. Fuchs, Ph.D., *Visiting Associate Professor of Geography*
Robert W. Kates, Ph.D., *Assistant Professor of Geography*
Rodman E. Snead, Ph.D., *Assistant Professor of Geography*
Guy H. Burnham, A.M., *Instructor in Geography*

When the Graduate School of Geography was organized in 1921, Clark became the second university in the United States to establish a separate graduate program in geography. At the present time, advanced training is provided leading to the Master's and Doctor's degrees. In addition, the Staff offers a series of courses for undergraduates within the liberal program of Clark University.

UNDERGRADUATE PROGRAM

Majors in geography are required to take seven year-courses, or the equivalent, in geography and related fields. At least four, and not more than five, of these courses must be in geography.

Geography 10, Elements of Geography, is usually taken in the freshman year, or as early as possible after the selection of Geography as a major. One or two of the following courses may be taken during the sophomore year: Geography 150a, Geography 160b, Geography 191. Juniors and seniors are eligible for 200-level courses.

Subjects in Group A (Science and Mathematics) strongly recommended by the staff are mathematics, geology and biology. Recommended fields listed under Group B (Social Science) include history, economics, international relations, sociology and anthropology.

An Honors Program in geography offers opportunity for independent study and research. Information regarding the program can be obtained from the departmental office.

THE GRADUATE SCHOOL OF GEOGRAPHY

Master of Arts: In order to enter the M.A. program without condition, a student must give evidence of some background in the elements of geography, in economic geography and in cartography. Courses taken to remedy any deficiencies will not count as part of the regular M.A. program.

A first-year student is required to take Geography 360a, Geography 214 or Geography 220, and one seminar. He must elect enough additional graduate courses to make a total of five, of which one each semester may be a regional course. In the second semester, he must elect a single or a double thesis course.

Oral examinations for the master's degree cover four fields (three systematic and one regional) approved by the staff. By April 15 of the year in which the candidate expects to receive his degree, he must submit an acceptable draft of the thesis to his adviser; this will then be circulated among the staff members for approval. After all revisions have been made and the draft approved by the adviser, the thesis is typed in final form. University requirements concerning the thesis can be found in the section on the Graduate School.

Doctor of Philosophy: Normally, to enter the Ph.D. program, a student must have completed all requirements for a master's degree in geography at Clark or at another institution. A student otherwise qualified for doctoral work who does not have a graduate degree in geography should consult the director of the Graduate School of Geography. A student who began his graduate work at Clark may enter the final resident year for the Ph.D. only upon written request and written acceptance by the director. Further details are available from the departmental office.

A doctoral candidate normally elects four courses each semester. If he lacks background in geomorphology or climatology he must take courses in the fields in which he is deficient. He must pass an examination in French, German, Russian or Spanish, preferably in his first year at Clark. The department may set an additional language or other requirement as the student's field of research may demand. The language and alternative requirements must be fulfilled before the preliminary examination is scheduled.

The candidate offers five fields in his preliminary examination. The major is the field in which the student expects to write his dissertation. One of the four minor fields must be a region. One of the minor fields is to be written, at a time specified by the staff; the remainder of the examination is oral. In addition a short period will be devoted to a discussion of the candidate's dissertation plans.

By March 15 of the year in which the candidate expects to receive his degree he must submit an acceptable dissertation draft to his major professor. If this is approved, it will be circulated among other staff members for their comments and a date set for its defense. If the defense is adequate, and after any necessary revisions have been approved by the major professor, the dissertation is typed in final form. The original and a carbon copy must be delivered to the departmental office at least four weeks before the date of commencement. All dissertations are microfilmed and, for this reason, it is required that illustrations be in black and white, in no case requiring more than a single fold.

Distinctive Features and Specialization

The Clark Graduate School of Geography has the substantial advantage of being centrally situated within New England, a region of varied rural and urban landscapes and renowned cultural centers.

The School has become a traditional "port of call" for professors of geography from this and other countries, and the graduate students have opportunities to visit with them as well as to attend the lectures which are arranged.

Graduate students are assigned desks and shelves in the Geography Workroom. The Workroom and other sections of the Geography Building contain specialized equipment and research facilities for the use of students and staff. The Libbey Library of the Geography Building serves for general conferences and the reception of visiting lecturers. Workroom and classroom fees, totaling $100 per semester, are payable on November 1 and March 1.

A feature of the Graduate School of Geography is the two-week field camp program at the beginning of the fall term. The program includes studies of land utilization, geomorphology, meteorology, resources and urban geography, with special training in mapping and other field techniques.

Graduate course work normally begins on the Monday after the close of field camp. A reading period begins about May 1 each year, allowing students time to coordinate their work prior to the oral examinations.

Publications: The professional magazine *Economic Geography* is edited by a staff member. Started at Clark University in 1925, it is the only journal published in English that specializes in economic and urban geography.

The graduate students, through the years, have maintained the Clark University Geographical Society. It publishes *The Monadnock,* a booklet which keeps geography alumni in touch with each other and with current activities in the school.

COURSES

10. ELEMENTS OF GEOGRAPHY.
Physical and cultural phases of geography and application of some principles of geography to selected regions. Open to freshmen and sophomores. Juniors and seniors admitted only by consent of the instructor. Indivisible course. Mr. Warman.

150a. MANAGEMENT AND CONSERVATION OF RESOURCES.
An introduction to natural resource problems in an era of rising population pressure. Prerequisite: Geography 10 and Economics 11 or equivalent. Mr. Kates.

160b. ECONOMIC GEOGRAPHY.
An introductory study of the major areal differences in both kind and level of economic activity. Prerequisite: Geography 10 or Economics 11, or equivalent. ~~Mr. Fuchs.~~
*Mr. Natoli

191. CARTOGRAPHY AND GRAPHICS.
Preparation of maps, graphs, charts. Restricted to twenty. (See instructor). Mr. Burnham.

200b. GEOGRAPHY IN EDUCATION. Not offered, 1963-64.
Geography in the present-day school system; designed to meet needs of those teaching or expecting to teach geography as a separate subject or in the social studies. Mr. Warman.

201. POLITICAL GEOGRAPHY.
Major political problems of the world as related to geographic factors and applied to selected regions. Mr. Van Valkenburg.

202. HONORS.
Independent study, reading and research. Open only to honors undergraduates. Staff.

214a. PRINCIPLES OF GEOMORPHOLOGY.
The analysis and distribution of physical features in the geographic landscape. Field

*- Research Fellow in Geography -

trips required, with field trip fee. Prerequisite: Geography 10 or Geology 12, or equivalent. Mr. Snead.

214b. Regional Physiography.

The regional interpretation of major land forms of North America and their interrelationships with climate, vegetation and soils. Field trips required, with field trip fee. Prerequisite: Geography 214a or equivalent. Mr. Snead.

220a. Elements of Physical Climatology.

A survey of the elements of climate, atmospheric circulation and the exchange of heat and moisture between the earth and its atmosphere. Prerequisite: Geography 10 or consent of the instructor. Mr. Snead.

220b. Regional Climatology.

World classification and description of climates. The various classifications of climate especially as related to vegetation. Prerequisite: Geography 220a or consent of the instructor. Mr. Snead.

245a. Introduction to Quantitative Methods in Geography.

Elementary statistical methods for geographers. Prerequisite: consent of the instructor. Mr. Kates.

282a. Geography of Anglo-America. Not offered, 1963-64.

283a. Geography of Middle America. Not offered, 1963-64. Mr. Warman.

283b. Geography of South America. Mr. Warman.

285a. Geography of Europe. Not offered, 1963-64.

286a. Geography of Southern Asia. Mr. Snead.

287b. Geography of the Soviet Union. Mr. Fuchs.

291. Advanced Cartography. Mr. Burnham.

310b. Principles of Geomorphology. Not offered, 1963-64. Mr. Snead.

340. Rural Land Use. Not offered, 1963-64.

A study of the factors associated with the spatial differentiation of rural land uses. Particular attention will be given to the use of land for agriculture and to relevant methods of area research.

347b. Quantitative Methods in Geographic Research.

Application of quantitative methods to current geographic research. Prerequisite: Geography 245a or equivalent. Mr. Kates.

350. Problems of Resource Management.

Appraisal of methods of estimation, projection and allocation of resource availability and needs. Mr. Kates.

360a. Problems in Economic Geography.

Various research fields, research methods, and detailed techniques in economic geography. Mr. Murphy.

361. Urban Geography.

The modern city from the geographic viewpoint, with emphasis on the American city. Mr. Fuchs.

380a SEMINAR; Changing Goals in Geographic Research Mr. Fuchs

370. Human and Cultural Geography. Mr. Warman.

390a. Air Photo Interpretation. Not offered, 1963-64.
Offered in alternate years. Mr. Snead.

399a. Field Methods and Studies.
Two weeks in Fall. Fee required. One field camp required of each graduate student. Staff.

SEMINARS

315b. Seminar in Geomorphology. Mr. Snead.

355b. Seminar on Resources. Mr. Kates.

365b. Seminar in Economic Geography. Not offered, 1963-64. Mr. Murphy.

366a. Seminar in Urban Geography. Not offered, 1963-64 Mr. Fuchs.

375a. Seminar in Cultural Geography. Mr. Warman.

READING, RESEARCH AND THESIS COURSES

300. Reading Course.
Prerequisite: consent of the instructor.

301. Research in Geography.
Prerequisite: consent of the instructor.

302. Thesis Research.
Single or double course. Prerequisite: consent of the staff.

Geology

DEPARTMENT FACULTY

Wesley E. Bryers, A.B., *Instructor in Geology*

UNDERGRADUATE PROGRAM

The department offers an undergraduate major, commencing in September, 1963. The program is offered with the cooperation of Dr. Snead of the University's Graduate School of Geography and Joseph R. Sage of the Civil Engineering Department of Worcester Polytechnic Institute.

Majors in geology are required to take seven year-courses or their equivalent in half-year courses. At least four and one-half of these courses must be in geology or geomorphology. Attendance at an approved summer field camp is required of majors and counts as a half- to full-year course in geology.

Related fields which may also be used toward fulfilling the requirements for the major are civil engineering, biology, chemistry, mathematics, physics and cartography.

COURSES

11. General Geology.
Introduction to geology, origin of the earth, its development through time and the succession of plant and animal life. First semester deals with common rocks, their structure, origin and occurrence; geological activities of the air, streams and sea; nature of glaciers, volcanoes and earthquakes, and age of the earth. Laboratory work consists of rock and

mineral identification and map interpretation. Second semester deals with the origin of continents and ocean basins, their development through time; the geologic history of North America; and evolution of life through geologic time. Laboratory work consists of geologic map interpretation and fossil identification. Occasional field trips. Indivisible course. Open to freshmen. Laboratory fee. Mr. Bryers.

121a. INTRODUCTORY MINERALOGY.
Study of crystallographic, physical and chemical properties of common minerals. Field trips. Mr. Bryers.

122. ECONOMIC GEOLOGY.
Introductory survey of the origin and structural relations of the important metallic and non-metallic mineral deposits. Techniques of exploration and mining will be reviewed. Field trip. Mr. Bryers.

131a. STRUCTURAL GEOLOGY. Not offered, 1963-64.
Analysis of rock deformation based on the principles of mechanics and the utilization of research data obtained from laboratory and field investigations. The principles of structural geology will be applied to the interpretation of major fold, fault and fracture systems of the earth. Field trips. Mr. Bryers.

141b. THE FOSSIL RECORD. Not offered, 1963-64
A systematic survey of the morphology, taxonomy and geologic history of groups of organisms commonly found as fossils. The techniques and principles used for interpreting the fossil communities in terms of age and environment will be discussed. Field trips. Mr. Bryers.

SUMMER FIELD CAMP IN GEOLOGY.
Required of geology majors and should be taken at the end of the sophomore or junior year at a field camp approved by the department.

Geography: course descriptions are under the section, "Geography."

214a. PRINCIPLES OF GEOMORPHOLOGY. Mr. Snead.

214b. REGIONAL PHYSIOGRAPHY. Mr. Snead.

220a. ELEMENTS OF PHYSICAL CLIMATOLOGY. Mr. Snead.

220b. REGIONAL CLIMATOLOGY. Mr. Snead.

Civil Engineering: course descriptions are in the section under "Department of Civil Engineering" in the catalog of Worcester Polytechnic Institute.

CE. 541. SEDIMENTATION AND STRATIGRAPHY. Mr. Sage.

German

DEPARTMENT FACULTY

Karl J. R. Arndt, Ph.D., *Professor of German, Department Chairman*
James S. Edwards, A.M., *Associate Professor of German*
Dorothea Schaefer, Ph.D., *Assistant Professor of German*
Hans Jürgen Schlütter, Ph.D., *Assistant Professor of German*

UNDERGRADUATE PROGRAM

The Department of German intends primarily to give its students a liberal and human-

JOHN T. KRUMPELMANN, PH.D., ASSISTANT PROFESSOR OF GERMAN, SECOND SEMESTER, 1963-64 istic education by presenting and interpreting the language, life, and literature of German-speaking peoples. Students interested in German as their major should consult the department chairman.

COURSES

11. INTRODUCTORY GERMAN.

A comprehensive introduction to the written as well as the spoken language. The course aims at acquisition of all four skills: reading, writing, speaking and understanding. The language laboratory will be used to assist in reaching these goals. Laboratory fee. Indivisible course. Staff.

12. INTERMEDIATE GERMAN.

After a review of German grammar this course will concentrate on "Gebrauchsprosa." Newspaper articles will serve as material for the practice of reading and writing skills. Aural and oral training will be continued with the assistance of the language laboratory. Laboratory fee. Prerequisite: German 11 or advanced placement. Indivisible course. Staff.

14. INTERMEDIATE ORAL AND WRITTEN GERMAN. Not offered, 1963-64

Principally for students who decide to major in German but have no preparatory school training in the language. Normally the course will be taken with German 12, giving students a six-day schedule in German. Intensive aural-oral drill, assisted by the Language Laboratory. Prerequisite: consent of the instructor. Staff.

130. INTRODUCTION TO GERMAN CLASSICISM.

Reading and interpretation of works of Lessing, Goethe, and Schiller. Prerequisite: German 12 or advanced placement. Indivisible course. Mr. Krumplemann (2nd sem.) Mr. Arndt.

132. ADVANCED ORAL AND WRITTEN GERMAN.

Intensive training in the aural, oral and written use of the language in preparation for teaching and government service. Required of majors. Prerequisite: oral and written examination. Indivisible course. Mr. Schlütter.

134. RECENT GERMAN LITERATURE.

Reading and interpretation of recent German dramatic and narrative works. Prerequisite: German 12 or advanced placement. Indivisible course. Mr. Edwards.

141. GERMANIC CIVILIZATION. Not offered, 1963-64.

Illustrated lecture course on the literature, history and fine arts of German lands from the Holy Roman Empire to the present day, with emphasis on the Reformation, Age of Enlightenment and the Classical Period. Given in English. Mr. Edwards.

154. HISTORY OF GERMAN LITERATURE.

Survey of German literature from earliest times to the present. Course replaces German 152 and 153. Given in German. Prerequisite: German 132 or consent of the instructor. Indivisible course. (Mr. Krumpelmann, 2nd sem.) Mr. Arndt.

161a. GERMAN LYRIC POETRY. Not offered, 1963-64.

German lyric poetry from Klopstock to the present. Given in German. Prerequisite: German 132 or consent of the instructor. Indivisible course. Mr. Arndt.

162b. FAUST. Not offered, 1963-64.

Reading and discussion of the major German versions of the *Faust* theme, including the medieval *Faustbuch* and Marlowe's *Faustus*. Goethe's *Faust I* and *II* will be stressed.

Given in German. Prerequisite: German 132 or consent of the instructor. Indivisible course. Mr. Arndt.

164a. THE GERMAN NOVEL OF SELF-DEVELOPMENT. Not offered, 1963-64.
A study of the German *Entwicklungsroman*, starting with von Eschenbach's *Parzival*, in modern German. Given in German. Prerequisite: German 132 or consent of the instructor. Indivisible course. Mr. Arndt.

165b. FROM EXPRESSIONISM TO CATASTROPHE. Not offered, 1963-64.
German literature from World War I to World War II. Given in German. Prerequisite: German 132 or consent of the instructor. Mr. Arndt.

166. GERMAN DRAMA SINCE KLEIST.
Given in German. Indivisible course. Mr. Edwards.

170a. THE FAUST THEME IN LITERATURE. Not offered, 1963-64
A study of the fortunes of Faust and the Faustian spirit as treated in European and American literature from the Reformation to Hiroshima. Given in English. Prerequisite: consent of the instructor. Mr. Arndt.

172b. THE GERMAN CONTRIBUTION TO WORLD LITERATURE. Not offered, 1963-64
Goethe in 1827: "The epoch of world literature is here and everyone must now work to hasten the development of this epoch." This course will study such translated works of German literature which contribute most to the understanding of Germany and her place in the Western World. Reading, analysis and discussion of translated works from various periods of German literature, starting with the *Song of the Nibelungs* and ending with representative works of the currently dominant "Group 1947." Given in English. Prerequisite: consent of the instructor. Mr. Arndt.

200b. SEMINAR. Not offered, 1963-64
Principally for majors but open to other qualified upperclassmen. Research into selected area of German literature. Prerequisite: consent of the instructor. Mr. Arndt.

History, Government and International Relations

DEPARTMENT FACULTY

Sherman S. Hayden, Ph.D., *Professor of International Relations, Department Chairman*
Robert F. Campbell, Ph.D., *Professor of American History*
H. Donaldson Jordan, Ph.D., *Professor of English History*
Dwight E. Lee, Ph.D., *Jacob and Frances Hiatt Professor of European History*
Clifford K. Shipton, Ph.D., *Professor (affiliate) of American History*
George A. Billias, Ph.D., *Associate Professor of American History*
Morris H. Cohen, Ph.D., *Associate Professor of Government*
Gerald N. Grob, Ph.D., *Associate Professor of American History*
Daniel R. Borg, Ph.D., *Assistant Professor in European History*
George H. Merriam, Ph.D., *Lecturer in American History* (To Feb. 1964)

UNDERGRADUATE PROGRAM

The department offers basic courses in the fields of American, European and British history, American and European government, and international relations. It offers major programs of study in history or government and participates in the interdepartmental program of International Relations.

All departmental majors must take History 10. preferably in the freshman year; Economics 11, normally before the end of the sophomore year; and History 205a and 205b, in either the junior or senior year. Majors in government should also take Government 15 before the end of the sophomore year. Further elections in this and related departments are determined by the student's special interest but they are expected to include at least two upper-class courses in this department, in addition to History 205.

Non-majors who have not taken History 10 may elect other courses offered by the department with permission of the instructor if, in his judgment, the student has an adequate background for the course.

GRADUATE PROGRAM

The principal fields of graduate study are American, English and European history and politics, modern diplomacy, and the international relations of the United States, Europe, the Commonwealth and the Far East.

Master of Arts: The program for the degree of Master of Arts is worked out individually with each student, who may choose to concentrate on history, government or international relations. All students are required to take the departmental seminar, History 30a.

Doctor of Philosophy: The program for the degree of Doctor of Philosophy may be taken in history or international relations. Each student must choose four fields of study, to be agreed upon as early as possible in the first year of residence beyond the Master of Arts and after a conference between the student and the department staff. In a history program, at least one field must be chosen from related subjects. In an international relations program, work in economics and geography should be included upon consultation among the departments concerned. One or two of the four fields should be completed by passing written examinations. The others are tested by an oral examination given by the staff. The passing of the four fields by courses or examination constitutes the "preliminary examination."

Before completing the preliminaries, examinations in French and German must be passed. Permission may be requested to substitute another language for one of these or a second examination in either one designed to demonstrate research competence at a high level.

The doctoral dissertation, written in that field which is designated as the special field, must be submitted in complete preliminary draft to the supervising instructor not later than March 1 of the year in which the candidates hope to receive the degree. The final examination for the doctorate covers both the dissertation and the special field.

COURSES IN HISTORY

10. Europe and the United States Since 1500.
A study of selected topics designed to illustrate the evolution of modern Western society. The emphasis throughout will be on the thought patterns underlying institutional developments. Mr. Borg, Mr. Campbell, Mr. Grob.

12. History of England.
Constitutional history is emphasized, particularly in the first semester. Mr. Jordan.

202. THE IDEA OF HISTORY.
A seminar on the idea of history from Thucydides to the Nineteenth Century. Mr. Borg.

205a. INTRODUCTION TO POLITICAL PHILOSOPHY.
A study of the main trends of Western political thought with reference to their underlying social, political and economic realities. Required of departmental majors.
Mr. Jordan.

205b. RECENT POLITICAL THOUGHT.
The conflicting ideologies of our time in their development since the French Revolution. Required of departmental majors. Mr. Jordan.

208a. TOTALITARIANISM. Not offered, 1963-64.
A seminar on the origins, ideology and operation of the German Nazi and Italian Fascist regimes. Mr. Borg.

209b. CHURCH AND STATE IN MODERN EUROPE. Not offered, 1963-64
A seminar on church-state relations since the Reformation, with special reference to political attitudes and involvements of established churches since the French Revolution.
Mr. Borg.

21. FOUNDATIONS OF MODERN EUROPE.
The later Medieval, Renaissance and Reformation periods. Offered in alternate years.
Mr. Lee, Mr. Borg.

210. EUROPE, 1648-1815. Not offered, 1963-64.
The rise of the absolute state, the old regime, the French Revolution and Napoleon. Attention is given to the rise of science, the Enlightenment and the origins of liberalism and rationalism. Offered in alternate years. Mr. Borg.

211. EUROPE, 1815-1939. Not offered, 1963-64.
The development of the major European nations and their interrelations. Offered in alternate years. Mr. Lee.

213b. EUROPEAN DIPLOMATIC HISTORY, 1848-1918. Not offered, 1963-64.
Mr. Lee.

215. GERMANY SINCE 1500.
Offered in alternate years. Mr. Borg.

22b. TUDOR AND STUART ENGLAND.
The period from 1485 to 1688 with attention to the social backgrounds of English literature and conditions leading to the colonization of America. Offered in alternate years. Mr. Jordan.

221a. ENGLAND IN THE TWENTIETH CENTURY.
Stress on individual research on significant problems. Offered in alternate years.
Mr. Jordan.

225a. RECENT HISTORY OF THE BRITISH EMPIRE COMMONWEALTH. Not offered, 1963-64.
Developments since about 1900. Offered in alternate years. Mr. Jordan.

230a. INTELLECTUAL HISTORY OF THE UNITED STATES.
American ideas from the late 18th century to the present. Mr. Grob.

231. AMERICAN COLONIAL HISTORY.
From the first English settlements to the Revolutionary War era. Mr. Billias.

234a. AMERICAN DIPLOMATIC HISTORY.
From 1776 to about 1941. Offered in alternate years. Mr. Hayden.

235a. THE UNITED STATES IN THE TWENTIETH CENTURY.
Offered in alternate years. Mr. Campbell.

236a. AMERICAN POLITICAL HISTORY, 1828-1877. Mr. Grob.

237. ERA OF THE AMERICAN REVOLUTION. Not offered, 1963-64.
Mr. Billias.

238~~a~~. THE FEDERALIST AND JEFFERSONIAN ERAS.
Opportunity for group discussion and individual research in the early national period.
Mr. Billias.

239. INTRODUCTION TO RESEARCH IN AMERICAN COLONIAL HISTORY.
Lectures on selected topics and opportunities for research in the field; discussion of problem areas. Admission only by permission of the instructors.
1st sem. – Mr. Merriam, Mr. Shipton.
2nd sem. – Mr. Billias + " "

274b. THE MODERN FAR EAST.
Primarily, international relations in the region since 1895. Offered in alternate years.
Mr. Hayden.

281b. RUSSIA, 1700-1917. Mr. Lee.

282b. HISTORY OF THE SOVIET SYSTEM. Not offered, 1963-64.
A brief survey of Marxist ideology and pre-1917 Russian history and a concentration on the political, economic (non-technical) and social evolution of Russia under the Communist regime.

30a. DEPARTMENT SEMINAR.
Introduction to bibliography and methods of research. Required of all first-year graduate students in the department. Mr. Billias and the Staff.

314a. EUROPEAN INTERNATIONAL RELATIONS, 1870-1918. Mr. Lee.

331b. PROBLEMS IN THE HISTORY OF THE UNITED STATES.
Individual research topics, supplemented by readings and discussion in the field of United States history. Mr. Grob, Mr. Billias.

332. PROBLEMS IN AMERICAN COLONIAL HISTORY. Not offered, 1963-64.
Mr. Billias.

GRADUATE READING AND THESIS COURSES

31. READING }
310. THESIS } IN THE HISTORY AND INTERNATIONAL RELATIONS OF EUROPE.
Mr. Borg, Mr. Lee.

32. READING }
320. THESIS } IN THE HISTORY AND INTERNATIONAL RELATIONS OF ENGLAND AND THE BRITISH EMPIRE.
Mr. Jordan.

33. READING }
330. THESIS } IN THE HISTORY OF THE UNITED STATES. Mr. Billias, Mr. Grob.

38. READING }
380. THESIS } IN RUSSIAN HISTORY.

COURSES IN GOVERNMENT

14. INTERNATIONAL RELATIONS.
A survey of world politics since 1914, with emphasis on the shifting patterns of power and the rise of new nations and revolutionary doctrines. The second semester deals mainly with World War II and later events. Mr. Hayden.

15. INTRODUCTION TO AMERICAN GOVERNMENT.
A short survey of the theories of the origins and purposes of the state is followed by a study of American government with emphasis on contemporary problems of the federal government. Mr. Cohen.

240b. SEMINAR IN INTERNATIONAL RELATIONS.
Basic ideas and their application to current problems. Required for international relations majors. Open to a limited number of non-majors at the discretion of the instructor. Mr. Hayden.

241. INTERNATIONAL LAW AND ORGANIZATION. Not offered, 1963-64.
First semester deals with the historic principles of international law and their application in the modern world. Second semester deals with the institutions created to handle problems of commerce, welfare and collective security on an international basis. Offered in alternate years. Mr. Hayden.

25a. COMPARATIVE GOVERNMENT.
The governments and politics of Great Britain and the major European powers. Offered in alternate years. Mr. Cohen.

251a. AMERICAN POLITICAL PARTIES. Not offered, 1963-64.
American party organizations, pressure groups and the electorate in American politics, with emphasis on current problems and trends in the field. Offered in alternate years. Mr. Cohen.

252b. INTRODUCTION TO PUBLIC ADMINISTRATION.
An examination of the role of administration in modern government, including problems of personnel administration, fiscal management, administrative regulation and government organization. Offered in alternate years. Mr. Cohen.

254. AMERICAN CONSTITUTIONAL HISTORY AND LAW. Not offered, 1963-64.
A study of the major developments in our constitutional system and law, with emphasis in the second semester on contemporary cases and problems. Mr. Campbell, Mr. Cohen.

255b. THE LEGISLATIVE PROCESS. Not offered, 1963-64
A study of policy-making in Congress, involving problems of legislative organization and procedure, leadership and presidential-legislative relationships, examined primarily by the case method and by individual research on particular pieces of recent legislation. Mr. Cohen.

341a. PROBLEMS IN INTERNATIONAL RELATIONS. Mr. Hayden.

351b. PROBLEMS IN AMERICAN GOVERNMENT. Mr. Cohen.

GRADUATE READING AND THESIS COURSES

34. READING } IN INTERNATIONAL RELATIONS. Mr. Hayden.
340. THESIS }

35. READING } IN AMERICAN AND COMPARATIVE GOVERNMENT AND POLITICS.
350. THESIS } Mr. Cohen.

International Relations

See the announcements of the Department of History, Government and International Relations and those listed under Interdepartmental Majors.

Interdepartmental Majors

The faculty has authorized interdepartmental majors in order to provide a broader study of certain fields than can be fitted into any departmental program while yet preserving the unity of subject essential to a major. An interdepartmental major includes eight or more required courses. At present one program is offered under this plan.

International Relations

INSTRUCTOR IN CHARGE:

Sherman S. Hayden, Ph.D., *Professor of International Relations.*

FRESHMAN AND SOPHOMORE YEARS

History 10	Europe and the United States since 1500
Economics 11	Principles of Economics
Geography 10	Elements of Geography
Government 14	International Relations

JUNIOR AND SENIOR YEARS

Government 240b	Seminar in International Relations
Government 241	International Law and Organization
Geography 201	Political Geography
Economics 207	International Economics
Economics	One-half course to be selected

Linguistics

115. MAN AND LANGUAGE. Not offered, 1963-64.
An introduction to the analysis of the nature and function of human language; its role in the life of individuals and societies. What is language? What is the relation between language and thought? Does our language partially determine how we perceive the world? Why do languages change, and how? Is communication the primary function of language? How does language bind social groups together? How are the world's languages related to each other? Why don't we have a world language? The course is designed for the general student who wishes to know more about the nature of the uniquely and universally human institution of language, and for the student or teacher of English or foreign languages who is interested in the light which linguistic science can give upon the relations between his field and other areas of life and knowledge. Mr. Reid.

September 1963

1620 PROGRAMMING COURSE

A non-credit course in programming for the 1620 will be offered this semester.

The course will meet once a week for approximately an hour and a half and the time has been tentatively set at 6:00 PM on Monday in order to avoid conflicts with laboratories.

FORTRAN for use on the 1620 on campus will be followed by Machine Language and S.P.S.

The FORTRAN portion will be a prerequisite for Numerical Analysis and the remaining portion will be optional.

A $15 lab fee will be charged and used to give assistance in key punching programs for courses and research. No further charge will be made for future use as a student at Clark.

Please register with the secretary of the Computer Center in the Mathematics office 201B.

Mr. Stubbe

Mathematics

DEPARTMENT FACULTY

Daniel Gorenstein, Ph.D., *Professor of Mathematics, Department Chairman*
Seymour Hayden, Ph.D., *Associate Professor of Mathematics*
John S. Stubbe, Ph.D., *Associate Professor of Mathematics*
Henry Frandsen, Ph.D., *Assistant Professor of Mathematics*
John F. Kennison, Ph.D., *Assistant Professor of Mathematics*
RICHARD TURYN, M.A., LECTURER IN MATHEMATICS

UNDERGRADUATE PROGRAM

The department offers courses leading to a major in mathematics, courses necessary for the study of physical and certain social sciences and courses for the student wishing to learn the fundamental concepts of mathematics.

The departmental major requires five year-courses in mathematics and two year-courses in an allied field of study. Mathematics 12, 13, 113 and 214 are required; while Mathematics 11 cannot be counted among the five year-courses in mathematics.

GRADUATE PROGRAM

The department offers courses leading to the degree of Master of Arts. The program is designed to give the student an understanding of the basic concepts of the major fields of mathematics and to fit him for further study in the subject if his talents warrant it.

Master of Arts: A reading knowledge of one foreign language is required. A thesis is also required, the subject of which may be chosen in consultation with a member of the department.

COURSES

11. Fundamentals of Mathematics.

Elementary study of mathematical logic, postulational systems, algebra, point sets, analytic geometry, the concept of function, trigonometric functions, natural numbers, cardinal numbers, the concept of limit, and some brief attention to elementary probability and statistical inference. Mr. Kennison and Staff.

12. Calculus.

Introduction to differential and integral calculus; essential for further study in mathematics as well as for the study of applications in the natural and social sciences. Mr. Frandsen, Mr. Hayden and Staff.

13. Intermediate Calculus.

Geometric and physical applications of integration, sequences and series, three-dimensional analytic geometry, partial differentiation, multiple integrals, and a brief introduction to differential equations. Prerequisite: Mathematics 12. Mr. Stubbe.

14a. Introduction to Mathematical Logic. Not offered, 1963-64.

Axiomatic development of sentential and restricted predicate calculus; theory of classes, relations and functions; introduction to cardinal and ordinal numbers. Mr. Frandsen.

14b. Elementary Theory of Numbers. Not offered, 1963-64.

A study of the properties of divisibility, prime numbers, congruences and residues. Prerequisite: Mathematics 12. Mr. Frandsen.

15b. Differential Geometry. Not offered, 1963-64.
Elements of the metric geometry of curves and surfaces in Euclidean space developed by methods of calculus and analytic geometry extended to three dimensions. Prerequisite or to be taken concurrently: Mathematics 13.

16b. Introduction to Geometry.
Topics from projective geometry, non-Euclidean geometry and the foundations of Euclidean geometry. Prerequisite: Mathematics 13 or a B— or better in Mathematics 12.
Mr. Frandsen.

17. Mathematical Statistics. Not offered, 1963-64.
Elements of probability theory, frequency distribution test of significance, large and small sampling, analysis of variance. Prerequisite: Mathematics 12.

18a. Point-Set Topology. Not offered, 1963-64.
Set theory, topological spaces, continuous functions and metric spaces. Prerequisite: Mathematics 13 or at least a B— in Mathematics 12.

113. Introduction to Linear Algebra and Analysis.
First semester: mathematical induction, matrices, determinants, vector spaces, Euclidean vector spaces and quadratic forms. Second semester: the real number system, sequences, limits of functions, continuity, uniform continuity, differentiability and elements of point-set topology. Prerequisite: Mathematics 12 or at least a B+ or higher in Mathematics 11 plus consent of the instructor. Mathematics majors will normally take Mathematics 113 concurrently with Mathematics 13. Mr. Hayden, Mr. Kennison.

212. Numerical Analysis.
Calculus of finite differences, introduction to the theory of interpolation, error analysis, direct and iterative methods for solving equations and systems of equations. Prerequisite: Mathematics 13. Mr. Stubbe.

213. Point-Set Topology and Abstract Analysis.
Set theory, general topological spaces, metric spaces, compact spaces, uniform spaces, Banach spaces, Hilbert spaces and function spaces. Mr. Kennison.

214. Advanced Calculus.
Topics selected from among partial differentiation, integration, infinite series, improper integrals, Fourier series, integral transform and the calculus of variations. Prerequisite: Mathematics 13. Mr. Frandsen.

215. Modern Algebra.
Introduction to the theory of groups, rings, integral domain, fields, vector spaces, matrices and related topics. Prerequisite: Mathematics 12 or consent of the instructor.
Mr. Gorenstein.

216. Functions of a Complex Variable.
Analytic functions, line integrals, conformal mapping, Riemann surfaces. Prerequisite: Mathematics 214 or consent of the instructor. Mr. Stubbe.

218. Functions of a Real Variable. Not offered, 1963-64.
Foundations of the real number system, algebra of sets, transfinite arithmetic, metric spaces, topological spaces, sequences and series, measure theory, differentiation and integration and functional analysis. Prerequisite or taken concurrently: Mathematics 214, or consent of the instructor.

219. PROJECTIVE GEOMETRY. Not offered, 1963-64.
Synthetic and analytic projective geometry, including the projective theory of conics. Prerequisite: Mathematics 12 or consent of the instructor.

220. APPLIED MATHEMATICS. Not offered, 1963-64.
Ordinary and partial differential equations and their applications, vector analysis, infinite series, line and surface integrals, Bessel functions, Legendre polynomials and Fourier series, introduction to functions of a complex variable. Prerequisite: Mathematics 13.

221. ALGEBRAIC TOPOLOGY. Not offered, 1963-64.
Introduction to algebraic topology including homotopy theory, singular and simplicial homology, and application to general spaces.

222. TOPICS IN ANALYSIS. Mr. Stubbe, 1963-64
Content will be changed from year to year to fit the needs of graduate students. Staff.

223. TOPICS IN ALGEBRA.
Content will be changed from year to year to fit the needs of graduate students. In 1963-64, this course will consist of topics from the theory of finite groups. Mr. Gorenstein Staff.

225. ADVANCED MODERN ALGEBRA.
Galois theory, group theory, Wedderburn structure theorems for rings and linear algebras, introduction to algebraic number fields. Prerequisite: Mathematics 215.
Mr. Hayden.

Music

DEPARTMENT FACULTY

Relly Raffman, A.M., *Associate Professor of Music, Department Chairman* (On Leave, 1963-64)
Wesley M. Fuller, M.Mu., *Assistant Professor of Music*

UNDERGRADUATE PROGRAM

The department offers courses designed to teach students how to listen to music intelligently, to develop a comprehension of music on its own terms and to acquaint students with representative works from various periods of music history. A major in music will be offered, beginning in September, 1964.

To be admitted to the music major, a student must demonstrate through a written examination a knowledge of the fundamentals of music, and he must demonstrate no later than the beginning of the sophomore year the ability to read and perform simple keyboard works.

The music major *with emphasis in theory and composition* requires the student to take Music 11, 12, 13a, 13b, 14 and 15, three semester-courses in music history and one semester-course in art history or esthetics.

The music major *with emphasis in music history* requires the student to take Music 11, 12, 20 and four semesters of music history to be chosen from Music 16 through 19, inclusive. In addition, he must take Music 13a or 13b and a year-course in art history or one semester each of art history and esthetics.

Although there is no private instrumental instruction offered at the University, it is [illegible]y recommended that students engaged in the major program carry on their study with a qualified teacher. Practice space is available at a nominal rental fee.

COURSES

THEORY AND COMPOSITION

10a. Introduction to Music.
Designed for the non-major, this course is a prerequisite for entrance into Music 16 through 19, inclusive. No credit toward major allowed. Open to freshmen. Mr. Fuller.

11. Primary Theory. Not offered, 1963-64.
The study of music theory from the Greeks to the 19th century. Open to freshmen. Prerequisite: consent of the instructor.

12. Advanced Theory. Not offered, 1963-64.
The 19th and 20th centuries. Prerequisite: Music 11. Offered in alternate years.

13a. Sixteenth Century Counterpoint. Not offered, 1963-64.
Prerequisite: Music 11. Offered in alternate years.

13b. Eighteenth Century Counterpoint. Not offered, 1963-64.
Prerequisite: Music 11. Offered in alternate years.

14. Original Composition *(small forms).* Junior Seminar. Not offered, 1963-64.

15. Original Composition *(large forms).* Senior Seminar. Not offered, 1963-64.

MUSIC HISTORY

16a. Medieval and Renaissance Periods. Not offered, 1963-64.
A survey of music before 1600. Prerequisite: Music 10a. Offered in alternate years.

16b. Baroque and Classical Periods. Not offered, 1963-64.
A survey of musical style from 1600-1800. Prerequisite: Music 10a. Offered in alternate years.

17a. Nineteenth Century Music.
Prerequisite: Music 10a. Offered in alternate years. Mr. Fuller.

17b. Twentieth Century Music.
Prerequisite: Music 10a. Offered in alternate years. Mr. Fuller.

18a. Keyboard Music. Not offered, 1963-64.
A survey of keyboard literature from the 16th to 20th centuries. Prerequisite: Music 10a. Offered in alternate years.

18b. Opera.
Prerequisite: Music 10a. Offered in alternate years. Mr. Fuller.

19a. Choral Music. Not offered, 1963-64.
Prerequisite: Music 10a. Offered in alternate years.

19b. Chamber Music. Not offered, 1963-64.
Prerequisite: Music 10a. Offered in alternate years.

20. Senior Seminar in Music History. Not offered, 1963-64.

Philosophy

DEPARTMENT FACULTY

Robert N. Beck, Ph.D., *Professor of Philosophy, Department Chairman*
Jefferson A. White, M.A., *Assistant Professor of Philosophy*

UNDERGRADUATE PROGRAM

The department offers courses to students who wish to broaden their perspective and trace relations among the various fields of knowledge and to students who wish to major in philosophy.

The major consists of four courses in philosophy and three additional courses in related fields. The latter are determined according to the student's special interest.

COURSES

11a. Logic and Scientific Method.
Principles of valid reasoning and inductive methods and their application to problems of the natural and social sciences. Consideration of the relations between logic and problems of value. Open to freshmen. Mr. Beck.

11b. Problems of Philosophy.
Nature and method of philosophy. Application of philosophical method to contemporary personal and social problems. Detailed analysis of some typical problems in various fields of philosophy. Open to freshmen. Mr. Beck.

Philosophy 12 series is organized in three semester-courses, I, II and III.

121a. History of Ancient Philosophy. I.
Movements of philosophical thought from their origins with the early Greeks through the medieval period. Mr. White.

122b. History of Modern Philosophy II.
Major thinkers and philosophical movements from the beginnings of the modern period in Descartes to the 19th century. Prerequisite: one half-course in philosophy or History 10. Mr. White.

123a. History of Recent Philosophy III.
Recent developments in philosophy, with emphasis on the historical roots of contemporary thought. Prerequisite: Philosophy 122b. Mr. White.

13a. Problems of Ethics. Not offered, 1963-64.
Consideration of important ethical theories to acquaint the student with problems and scope of ethics and to aid him in the formulation of an ethical outlook. Offered in alternate years. Open to juniors and seniors. Mr. Beck.

13b. Esthetics.
The nature of art, the characteristics of esthetic experience, and the relation of art to the human enterprise as a whole. Special reference is made to representative figures in contemporary philosophy. Open to juniors and seniors. Mr. White.

14a. Social Philosophy.
Principles underlying social structure and functions. Examination of the goals, purposes,

norms and ideals of social process, and the relation of that process to the individual good. Offered in alternate years. Open to juniors and seniors. Mr. Beck.

14b. History of American Philosophy.
Survey of important philosophical ideas in America with emphasis on their relationship to American experience. Mr. Beck.

15a. Philosophy of Religion. Not offered, 1963-64.
The nature of religion as revealed by an examination of the history of world religions and representative types of contemporary religious philosophy. Open to juniors and seniors. Prerequisite: one half-course in philosophy. Mr. White.

191a ~~21.~~ 192b. Seminar in Philosophy.
Advanced study of topics of central importance to philosophy. Prerequisites: two year-courses in philosophy, including 121 and 122. Staff.

Honors in Philosophy.
Advanced individual study of philosophic problems. Honors includes the preparation of an acceptable thesis and a comprehensive examination. Prerequisite: consent of the department. Staff.

Education 290b. Philosophy of Education.
Description offered in the department statement under Education. Mr. Beck

Physics

DEPARTMENT FACULTY

Roy S. Anderson, Ph.D., *Professor of Physics, Department Chairman*
John H. Muller, Ph.D., *Associate Professor of Physics*
Earl E. Hays, Ph.D., *Associate Professor (affiliate) of Physics*
John A. Davies, Ph.D., *Assistant Professor of Physics*
Roger P. Kohin, Ph.D., *Assistant Professor of Physics*

UNDERGRADUATE PROGRAM

The department offers courses to students wishing to major in physics. While emphasis is placed on preparation for graduate study, the major will also assure adequate training for teaching or professional work in physics.

The major consists of Physics 101, 200, 201a, 204b, 206a, and 207b, Mathematics 13, and one course in chemistry, usually Chemistry 11. Students preparing for graduate work in physics are urged to register for one course in mathematics each year and to elect Physics 202a, 203b and 208a.

While Physics 11 or its equivalent is the normal prerequisite for all other courses in physics, students may attain advanced standing in physics by passing a placement examination. Mathematics 12 is a prerequisite for courses with numbers beginning with the numeral 2.

Students in the Honors Program must register for at least one course credit of Physics 235 and, at the conclusion of this course, must submit to the department a thesis based on this work. Recommendation for Honors in physics is determined in part by the quality of the thesis and the performance of the student on a comprehensive examination in physics. An Honors candidate must have at least a B— average in physics courses.

Attention is directed to courses, particularly in nuclear physics and electrical engineering, available for credit at the Worcester Polytechnic Institute.

GRADUATE PROGRAM

The department offers courses leading to a Master of Arts degree in physics and to a Doctor of Philosophy in chemical-physics. The latter degree is offered jointly with the Department of Chemistry and consists of a combination of courses in chemistry, mathematics and physics. Guidance of students in the program is provided jointly by the faculties of the Departments of Chemistry and Physics. Dissertation research is conducted in the Department of Physics.

Departmental research emphasizes the nature of the solid state, with particular reference to electric, magnetic and related phenomena. Experimental research is being conducted using electron spin resonance, nuclear magnetic resonance and nuclear quadrupole resonance techniques. Geophysical research in geomagnetism and oceanography is also being conducted with the Woods Hole Oceanographic Institution.

The language requirement for the Ph.D. degree in chemical-physics may be satisfied with either German or Russian.

COURSES

11. General Physics.

The principles of mechanics, heat, wave motion, electricity, and atomic and nuclear physics. Three lectures and one laboratory per week. Prerequisite: consent of the instructor is required in the absence of two years of high school algebra and trigonometry, or the equivalent. Indivisible course, except by consent of the instructor. Mr. Muller, 1st sem. Mr. Anderson, 2nd sem

101. Intermediate Physics.

Intermediate mechanics and electricity, using vector analysis. Mechanics: the statics and dynamics of particles, systems of particles and rigid bodies. Electricity: electric and magnetic fields and potentials. Direct, alternating and transient currents. Circuits and circuit elements. Three lectures and one laboratory per week. Required of physics majors. Prerequisite: Mathematics 12. Mr. Anderson, Mr. Hays.

200. Advanced Physical Measurements.

Laboratory in atomic, molecular, nuclear and solid-state physics. Three hours each week, throughout the year, for one-half course credit. Required of physics majors. Prerequisite or taken concurrently: Physics 206a. Mr. Irohin ~~Staff~~.

201a. Mechanics.

Advanced methods in mechanics, with emphasis on the motion of rigid bodies. D'Alembert's principle and Lagrange's equations. Required of physics majors. Prerequisite: Physics 101. Mr. Muller.

202a. Thermodynamics and Kinetic Theory.

The laws of thermodynamics, the kinetic theory of gases, and an introduction to statistical mechanics. Offered in alternate years. Mr. Anderson.

203b. Physical Optics.

The phenomena of diffraction, interference and polarization of light as explained by the electromagnetic theory. Offered in alternate years. Mr. ~~Anderson~~. Muller

204b. Electromagnetism.

The mathematical theory of electricity and magnetism. Fields and potentials. Maxwell's equations. Electromagnetic waves. Required of physics majors. Prerequisite: Physics 101. Mr. Davies.

205b. Electronic Devices and Circuits. Not offered, 1963-64.
Principles of electron tubes and transistors, with emphasis on design of electronic circuits. Three lectures and one laboratory per week. Prerequisite: Physics 101 or consent of the instructor. Offered in alternate years. Mr. Anderson.

206a. Modern Physics.
An introduction to the quantum nature of molecules, atoms and nuclei. Special relativity. The old quantum theory. The correspondence principle. Wave-particle duality. The uncertainty principle. The wave equation. Concurrent registration required in Physics 200. Required of physics majors. Prerequisites: Physics 204 and Mathematics 13. Mr. Kohin.

207b. Quantum Physics.
An introduction to quantum wave mechanics. Solutions of the Schrodinger equation. Operator techniques. Angular momenta. Approximation methods. Spectroscopy. Required of physics majors. Prerequisite: Physics 206a. Mr. Kohin.

208a. Introduction to the Solid State. Not offered, 1963-64
Crystal structure: symmetry and space groups. Chemical bonding: ionic and covalent crystals. Thermal and elastic properties. The band theory of metals and semi-conductors. Dielectric and magnetic properties. Low temperature properties, including superconductivity. Offered in alternate years. Mr. Anderson.

218. Physics and the Earth Sciences. Not offered, 1963-64.
The application of physics to problems in oceanography, seismology, and the atmosphere, with emphasis on the physical problems common to all. Selected readings are utilized. One-half course credit through the year. Mr. Hays.

230. Special Topics in Physics.
Independent studies in physics to provide for special needs. Staff.

235. Honors.
Independent experimental or theoretical research in physics. Staff.

301b. Advanced Mechanics. Not offered, 1963-64.
Lagrangian and Hamiltonian formulations. Kinematics and dynamics of rigid bodies. Prerequisite: Physics 201a. Mr. Muller.

303a. Kinetic Theory and Statistical Mechanics. Not offered, 1963-64.
The dynamics of gas particles as interpreted by the kinetic theory of ideal and non-ideal gases. Maxwell-Boltzmann canonical distribution. Fermi-Dirac and Bose-Einstein quantum distributions. The partition function. Applications to classical and quantum states of gases, specific heats, transport phenomena, and electric and magnetic properties of matter.

304b. Electrodynamics.
Maxwell's equations. Scalar, vector and retarded potentials. Electromagnetic radiation. Boundary value problems. Prerequisite: 204b or equivalent. Mr. Muller.

305. Quantum Mechanics. ~~Not offered, 1962-63.~~
Wave mechanics and the Schrodinger equation. Stationary and time-dependent approximation methods. The matrix formulation. The Dirac equation. Prerequisite: Physics 207b. Mr. Davies.

307b. THEORY OF THE SOLID STATE. Not offered, 1963-64.
Application of quantum mechanics to solids. Thermal, electric, magnetic, and optical properties. Energy bands and their structure. Prerequisite: Physics 208a and 305.

308a. THEORY OF ATOMIC AND MOLECULAR SPECTRA.
The electronic configuration of atoms: the Pauli principle and the building-up principle. Fine structure and the spinning electron. The Zeeman and Paschen-Back effects. Nuclear effects: hyperfine structure. The structure and properties of molecules as revealed by rotational, vibrational, and electronic spectra. Covalent and ionic bonds. Prerequisite: Physics 305 or consent of the instructor. Mr. Kohin.

309b. MAGNETIC RESONANCE.
The theory of the electron spin and nuclear magnetic resonance experiments, particularly in solids. The spin Hamiltonian and the magnetic interaction between particles. Chemical bonds and their description by the molecular orbital method. Prerequisite: Physics 308a. Mr. Kohin.

340. SEMINAR.
Seminars on various topics of contemporary interest are offered each year. Emphasis is on discussions of recent literature in each field and the presentation of department research in the area. Staff.

350. RESEARCH. Staff.

Psychology

DEPARTMENT FACULTY

Seymour Wapner, Ph.D., *G. Stanley Hall Professor of Genetic Psychology, Department Chairman*
*Heinz Werner, Ph.D., *G. Stanley Hall Professor of Genetic Psychology, Emeritus; Chairman, Board of Directors, Institute of Human Development*
Tamara Dembo, Ph.D., *Professor of Psychology*
Clemens E. Benda, M.D., *Professor (affiliate) of Psychology*
David Moriarty, M.D., *Professor (affiliate) of Clinical Psychology*
Leslie Phillips, Ph.D., *Professor (affiliate) of Psychology*
Joseph Weinreb, M.D., *Professor (affiliate) of Psychology*
Robert W. Baker, Ph.D., *Associate Professor of Psychology*
Roger Bibace, Ph.D., *Associate Professor of Psychology*
Walter H. Crockett, Ph.D., *Associate Professor of Psychology*
Gordon T. Gwinn, Ph.D., *Associate Professor of Psychology*
Bernard Kaplan, Ph.D., *Associate Professor of Psychology*
Donald M. Krus, Ph.D., *Associate Professor of Psychology*
Morton Wiener, Ph.D., *Associate Professor of Psychology*
Joachim F. Wohlwill, Ph.D., *Associate Professor of Psychology*
Brian Sutton-Smith, Ph.D., *Visiting Associate Professor of Psychology*
Herbert Lipton, Ph.D., *Assistant Professor (affiliate) of Psychology*
Joseph H. McFarland, Ph.D., *Assistant Professor (affiliate) of Psychology*
Juris Draguns, Ph.D., *Lecturer in Psychology*

* Deceased, May 14, 1964

Harold Goodglass, Ph.D., *Lecturer in Psychology*
Robert Kastenbaum, Ph.D., *Lecturer in Psychology*
Werner Koella, M.D., *Lecturer in Psychology*
Anthony Varjabedian, M.D., *Lecturer in Psychology*
Peter H. Wolff, M.D., *Lecturer in Psychology*
Polly Deweese, M.S., *Consultant to the Psychological Clinic, Psychiatric Social Worker*
Victor H. Pentlarge, M.D., *Consultant to the Psychological Clinic, Psychiatrist*
Bernard P. Rosenblatt, Ph.D., *Consultant to the Psychological Clinic*
Malcolm Sills, M.D., *Consultant to the Psychological Clinic*
Howard J. Slepian, Ph.D., *Consultant to the Psychological Clinic*

UNDERGRADUATE PROGRAM

The department offers courses for students majoring in psychology, majors in allied fields and students wishing an orientation to the field of psychology for general cultural development.

Psychology 11 is prerequisite to all other psychology courses. Majors are required to take Psychology 11 and 212. Students preparing for graduate work should obtain a reading knowledge of French and German.

GRADUATE PROGRAM

The department admits to graduate work only those students who plan to enroll in the Ph.D. program on a full-time basis. A Master of Arts degree, based on an experimental thesis, ordinarily completed within the first two years of graduate work, is a requirement for admission to candidacy for the Ph.D. degree.

Master of Arts: The customary program is five courses, including experimental psychology, statistical methods and three additional courses, supplemented by the writing of a thesis in the area of special interest.

Doctor of Philosophy: The student is required to pass with distinction five courses during the first year of graduate study and a minimum of four courses during the second year. The University language requirement must be met by a knowledge of French, German or Russian. He is required, normally at the end of the second year, through written examination, to demonstrate his competence in psychology as a whole and in an area of specialization. In addition, the student is required to demonstrate his ability to conduct independent research as evidenced by the presentation of an acceptable dissertation. Research for the dissertation should normally be completed during the fourth year at the University; however, the length of the program will vary depending upon individual circumstances. At a final oral examination a student is required to defend his dissertation and to show his competence in the general field of psychology and in his area of specialization.

The overall aim of the graduate program is to provide the student with a general, integrated background covering the various areas of psychology. Within this emphasis more specialized training—with special stress on experimental analysis—is available in the following areas: perception, learning, thinking and problem-solving, language, social, and personality.

There are also three more formalized programs which provide specialized training in the areas of Clinical, Developmental and Rehabilitation Psychology.

Clinical Psychology Program. The department offers a four-year A.P.A.-approved program in clinical psychology leading to the degree of Doctor of Philosophy. Beyond the standards of proficiency in the general field of psychology expected of all students, the student in the Clinical Program will be required to demonstrate special mastery in the understanding of concepts in the clinical area and in the use of clinical methods. One year of internship is included in this four-year program. Provision is made for a wide variety of practical experiences in cooperating institutions, clinics and agencies. There are over 20 institutions and agencies, in Worcester, Boston, Providence and surrounding areas which cooperate in providing such practicum and research facilities. In addition to the one-year internship, all students in the Clinical Program obtain a variety of practicum experiences in the Psychological Clinic throughout their enrollment in the graduate program. For further information, write to the director of the program: *Dr. Morton Wiener.*

A Psychological Clinic, directed by *Dr. Robert W. Baker,* is operated in connection with the Clinical Psychology Program. Further information concerning the clinic, see that section in the catalog.

Developmental Psychology Program. This program is designed to train students in a comparative-developmental analysis of behavior. It emphasizes not only the study of human development from infancy to old age, but also stresses the application of developmental principles, concepts and methods to problems of general psychology, psychopathology, social psychology, etc. For further information, write to the director of the program: *Dr. Joachim F. Wohlwill;* during 1963-64, *Dr. Bernard Kaplan* is serving as acting director of the program.

Rehabilitation Research Training Program. This program is designed to prepare graduate students for research on psychological problems related to rehabilitation of physically and mentally handicapped persons. Students obtain their primary research training by working as apprentices in real-life settings and in clinical facilities under the guidance of staff members working in the rehabilitation area. There is also an emphasis on the formulation of real-life problems in general theoretical terms, and in their analysis through laboratory experimentation. For further information, write to the director of the program: *Dr. Tamara Dembo.*

Financial Aid. In addition to University scholarships, fellowships, teaching assistantships, and stipends, the department has available such forms of financial support as United States Public Health Service and Vocational Rehabilitation Administration training stipends, Veterans Administration assistantships and stipends, and research assistantships.

INSTITUTE OF HUMAN DEVELOPMENT

Board of Directors: *Dr. Werner, chairman, and Drs. Kaplan, Phillips and Wapner*

Associated with the department is the Institute of Human Development, which has three aims: first, to integrate various research programs dealing with developmental problems; second, to bring to Clark University scholars, teachers, and research workers from disciplines for which developmental problems are pertinent such as anthropology, biology, and certain areas of medicine; third, to train research workers on pre- and post-doctoral levels in the comparative-developmental approach to behavior.

COURSES

11a. General Psychology.
Introduction to the principles of human behavior. Mr. Wapner.

11b. General Psychology.
Introduction to the principles of human behavior. Mr. Wapner.

103b. The Abnormal Personality.
Development of the abnormal personality and a survey of the major types of abnormal behavior. Prerequisite: Psychology 172a. Mr. Wiener.

150a. Introduction to Child Psychology.
The normal development of the child from infancy up to adolescence, with emphasis on the areas of physical and motor development, cognitive processes and language, and emotional and fantasy life. Mr. Sutton-Smith.

150b. Personality and Social Development of the Child.
The development of the child's personality and interpersonal behavior, in relation to family, peer group and culture. Mr. Sutton-Smith.

152b. Psychology of Adolescence. Not offered, 1963-64.
Development of personality during adolescence with special emphasis on personality changes of the adolescent in a modern urbanized culture.

160b. Introduction to Quantitative Methods in Psychology.
Problems of psychological measurement and statistical evaluation of psychological data. Mr. Crockett.

170a. Social Psychology.
The role of social factors in the behavior of individuals and of groups, including such topics as attitudes, prejudice, leadership and personality and culture. Mr. Crockett.

172a. Psychology of Personality.
The various theoretical approaches to the study of personality, with emphasis on trait theories, typologies, field theory and psychoanalysis. Also considered are the determinants of personality development and methods of appraising personality. Mr. Draguns.

201a. Learning and Motivation.
Role of learning and motivation in behavior. Mr. Gwinn.

202b. Psychology of Thinking.
Types of thought processes and methods of investigating them, with emphasis on concept formation, imagination, creative thought, reasoning and problem solving. Mr. Gwinn.

209a. Developmental Approaches to Behavior.
A critical examination of presuppositions, methods, concepts and empirical inquiries of those concerned with the development of behavioral systems. Implications of developmental conceptualization for all of the life sciences will be discussed. Psychological theories of Freud, Piaget and Werner will be given special emphasis. Mr. Kaplan.

209b. Developmental Approaches to Behavior.
A seminar on selected theoretical and methodological issues pertaining to the developmental analysis of behavior. Mr. Kaplan.

171B SEMINAR IN SOCIAL PSYCHOLOGY MR. CROCKETT

210b. SPECIAL PROBLEMS IN DEVELOPMENTAL PSYCHOLOGY.
The application of Werner's developmental psychology to special populations (the exceptional child, the brain-injured and the schizophrenic). Mr. Bibace.

212. EXPERIMENTAL PSYCHOLOGY.
General survey of experimental psychology with emphasis on scientific methods and laboratory technique. Lecture: 2 hours; Laboratory: 3 hours. Prerequisite: Psychology 106b or consent of the instructor. Mr. Krus.

220a. MATHEMATICAL APPROACHES TO PSYCHOLOGY.
Intensive analysis of several mathematical models used in psychology. Offered in alternate years. Prerequisite: Mathematics 12 or consent of the instructor. Mr. Crockett.

222a. PHYSIOLOGICAL PSYCHOLOGY.
A consideration of physiological mechanism of relevance to psychological problems. Mr. McFarland.

223b. SEMINAR IN SOCIAL PSYCHOLOGY. Not offered, 1963-64
Detailed examination of the methods and theory appropriate to a specific area in social psychology. In different years the course will cover interpersonal perception, attitude development and change, conformity to group norms, small group processes and similar topics. Included in the course is the preparation of an original investigation in the content area. Mr. Crockett.

230b. SEMINAR IN PSYCHOLOGY. Not offered, 1963-64.
Intensive discussion of special problems in psychology. Staff.

231a. SEMINAR IN THE HISTORY OF PSYCHOLOGY.
Historical development of theories and methods in psychology. Prerequisite: consent of the instructor. Mr. Gwinn.

232b. SEMINAR IN MODERN PSYCHOLOGICAL THEORIES.
Comparisons and evaluations of various modern theories in psychology. Prerequisite: consent of the instructor. Mr. Gwinn and Staff.

301. EXPERIMENTAL METHOD IN PSYCHOLOGY.
Experimental Method considered generally and in its application to problems of perception. Lecture: 2 hours; Laboratory: to be arranged. Mr. Wapner.

302. STATISTICAL METHODS.
Descriptive statistics, statistical inference and experimental design in psychology. Mr. Crockett.

303. HISTORY AND SYSTEMS OF PSYCHOLOGY. Not offered, 1963-64.
Historical development of theories, concepts and methods in psychology.

304a. PHYSIOLOGICAL ASPECTS OF BEHAVIOR, I. Not offered, 1963-64.
Neuro-anatomy as related to behavior. Mr. Varjabedian.

305b. PHYSIOLOGICAL ASPECTS OF BEHAVIOR, II. Not offered, 1963-64
Neurophysiological aspects of behavior.

310. APPRENTICESHIP IN REHABILITATION I. Miss Dembo.

311. Clinical Methods, I. Not offered, 1963-64
Observation, interviewing and testing. Mr. Baker.

312a. Theories of Deviant Behavior.
Deviant behavior as viewed by various theories. Clinical and experimental evidence is examined. Mr. Bibace.

313b. Principles and Concepts Underlying Psychological Tests. Not offered, 1963-64
Problems of psychological assessment by non-projective tests.

315. Advanced Child Psychology. Not offered, 1963-64.
Major dimensions and determinants of ontogenetic changes in behavior. Methodological problems in the study of children and in the assessment of developmental change. Offered in alternate years. Mr. Wohlwill.

316. Observational Methods in the Study of Children.
Offered in alternate years. Mr. Sutton-Smith.

317b. Behavior in Infancy. Not offered, 1963-64.
Mr. Wolff.

318. Seminar in Psychology of Interpersonal Relationships and Rehabilitation. Not offered 1963-64
Value problems pertinent to interpersonal relations will be discussed, including value possessions, value losses, regaining of values and adjustment to value losses. Miss Dembo.

321. Higher Mental Processes.
Experimental research pertaining to such functions as remembering, classifying, problem-solving, reasoning and concept-forming. Mr. Kaplan.

322b. Advanced Seminar on Organismic-Developmental Approaches to Behavior.
Basic categories of the organismic-developmental approach to life sciences, with examination of the application of these categories to a wide range of problem areas in psychology. Mr. Kaplan, ~~Mr. Bibace.~~

323. Psychology of Learning.
Theoretical viewpoints and experiments in the field of learning. Mr. Gwinn.

324. Theories of Personality.
Comparison of various theoretical approaches to the study of personality. Mr. Wiener.

325. Advanced Social Psychology. Not offered, 1963-64.
Intensive analysis of various theoretical systems in social psychology. Mr. Crockett.

326b. Theory of Psychological Scaling. Not offered, 1963-64.
Analysis of mathematical approaches to psychological scaling. Prerequisite: Psychology 220a. Offered in alternate years. Mr. Crockett.

330. Apprenticeship in Rehabilitation, II. Miss Dembo.

331. Clinical Methods, II.
Application of various clinical methods in the assessment of personality. Mr. Goodglass.

332a. Theories of Psychotherapy.
Comparison of various theoretical approaches to problems of psychotherapy.
Mr. Wiener.

319 TOPOLOGICAL PSYCHOLOGY & REHABILITATION MISS DEMBO

336a. CHILD PSYCHOLOGY IN RELATION TO GENERAL PSYCHOLOGY. Not offered, 1963-64.
Theory and research in child psychology in relation to general psychological theory. Offered in alternate years. Mr. Wohlwill.

337a. SEMINAR ON PROBLEMS IN CHILD AND DEVELOPMENTAL PSYCHOLOGY.
Mr. Sutton-Smith.

341. SEMINAR ON CURRENT LITERATURE. Not offered, 1963-64.

346b. DEVELOPMENTAL PSYCHOLOGY AND PSYCHOANALYSIS. Not offered, 1963-64.
Mr. Bibace.

350. APPRENTICESHIP IN REHABILITATION, III. Not offered, 1963-64 Miss Dembo.

351. CLINICAL METHODS, III.
Integration of various methods in assessment of personality and behavior. Mr. Phillips.

352. CLINICAL METHODS, IV.
Application of theoretical principles to psychotherapy. Mr. Weinreb.

356a. PSYCHOPATHOLOGY OF CHILDHOOD. Mr. Benda.

357. PSYCHOLOGY OF SYMBOLIC BEHAVIOR.
Basic aspects of symbolic behavior; theory, experimental research, ontogenesis, psychopathology of symbol formation. Offered in alternate years. Mr. Werner.

358. PSYCHOLOGY OF LANGUAGE, I. Not offered, 1963-64.
Language theory, ontogenesis of speech and experiments on language behavior.
Mr. Werner.

359. PSYCHOLOGY OF LANGUAGE, II. Not offered, 1963-64.
A seminar on comparative psychology of language behavior. In the first semester the relation between language formation and cultural levels will be stressed by drawing on anthropological data. Second semester deals with abnormal psychology of language behavior. Mr. Werner.

361b. SEMINAR IN PSYCHOLOGICAL REHABILITATION. Not offered, 1963-64 Miss Dembo.

362b. PSYCHOLOGICAL PROBLEMS IN GERONTOLOGY. Not offered, 1963-64.

363a. PROBLEMS IN COMPARATIVE PSYCHOLOGY. Not offered, 1963-64.

364b. SELECTED PROBLEMS IN PSYCHOPHARMACOLOGY. Mr. Krus and Visiting Staff. Not offered, 1963-64

365a. PROBLEMS IN THE PSYCHOLOGY OF SMALL GROUPS. Not offered, 1963-64.

370. APPRENTICESHIP IN REHABILITATION, IV. Not offered, 1963-64 Miss Dembo.

380. RESEARCH IN PSYCHOLOGY.
Direction of individual students in their research. Staff.

381. READINGS IN PSYCHOLOGY.
Critical analysis of literature in areas related to individual research. Staff.

385. PARTICIPATION IN PSYCHOLOGICAL CLINIC, I. Mr. Baker, Mr. Slepian.

386. PARTICIPATION IN PSYCHOLOGICAL CLINIC, II. Mr. Baker, Mr. Lipton, Mr. Slepian.

387. PARTICIPATION IN PSYCHOLOGICAL CLINIC, III.
Mr. Baker, Miss Deweese, Mr. Moriarty, Mr. Pentlarge, Mr. Rosenblatt, Mr. Sills, Mr. Wiener, Mr. Weinreb.

388. PARTICIPATION IN PSYCHOLOGICAL CLINIC, IV.
Mr. Baker, Miss Deweese, Mr. Moriarty, Mr. Pentlarge, Mr. Rosenblatt, Mr. Sills, Mr. Wiener, Mr. Weinreb.

389. INTERNSHIP. Staff.

390. DEPARTMENTAL COLLOQUIUM. Visiting Lecturers.

WORKSHOPS

Conducted annually in such areas as comparative-animal psychology, scaling theory, factor analysis, rehabilitation, cultural anthropology. Visiting Lecturers.

Romance Languages

DEPARTMENT FACULTY

*J. Richard Reid, Ph.D., *Professor of Romance Languages, Department Chairman*
Raymond E. Barbera, Ph.D., *Associate Professor of Romance Languages*
J. Fannin King, M.A., *Associate Professor of Romance Languages*
Theodore Nicol, Ph.D., *Associate Professor of Romance Languages, Acting Department Chairman—1963-64*
Mordecai S. Rubin, Ph.D., *Assistant Professor of Romance Languages*
H. Allen Whartenby, Ph.D., *Assistant Professor of Romance Languages*

UNDERGRADUATE PROGRAM

The department offers courses in the languages and literatures of France, Spain and Spanish America. These courses fall into two groups: lower level—French and Spanish 11 and 12, and upper level—all other Romance language courses.

In the lower level the primary aim is the mastery of the skills of communication in a language, with a view to its effective use for a variety of possible ends. These skills include reading, writing, speaking and understanding as well as what may be called basic literacy in the language.

In the upper level, the primary aim is an acquaintance in depth with a foreign civilization, principally through a study of its literature but with attention also to other aspects of its culture and to the further perfection of linguistic competence. The courses in literature are complemented by others in civilization and in advanced composition, conversation and phonetics.

A major in Romance languages must comprise:

1. Four full courses to be chosen from French 13, 114, 123a, 151a, 152a, 153b and 154b; Spanish 13 and 114; and Romance Languages 124b.
2. French 113 or the equivalent.
3. History 10, or the equivalent, normally to be completed by the end of the sophomore year.
4. At least one course, to be approved by the department, in non-Romance literature.

Students majoring in Romance languages are expected to acquire a thorough knowledge of either French or Spanish and are urged to acquire a competent knowledge of the other, both in language and literature.

*- On leave, 1963-64

Students intending to major in Romance languages should consult the department chairman. An honors program in Romance languages is available to qualified upperclassmen.

LANGUAGE LABORATORY

A modern electronic language laboratory is available for class instruction, independent study and self-appraisal. Use of the laboratory is required of students in the lower level and "13" courses in French and Spanish, and available to others. See the section on "Tuition and Other Charges" for the laboratory fee.

DEPARTMENTAL INTERNSHIP PROGRAM

The department cooperates with the Department of Education in a graduate program of preparation of teachers of Romance languages, leading to the degree of Master of Arts in Education. Participants carry appointment as Teaching Assistant Scholars and as Departmental Interns in Romance languages. Normally requiring two years, the program consists of half-time study in education and Romance languages and literatures, and half-time devoted to supervised teaching and other assistance to the Department of Romance Languages.

COURSES IN FRENCH

11. Elementary.

A course for beginners, including the elements of grammar, pronunciation and conversational patterns, graded readings and the writing of simple French. Three class periods and one to two hours in the language laboratory per week. Laboratory fee. Open to freshmen. Indivisible course. Mr. Rubin in charge Staff.

12. Intermediate.

Review of the elements, and further development of basic literacy and of a balanced mastery of all the communication skills; intensive and extensive reading. An intensive oral approach is used in the classroom. Three class meetings and one to two hours in the language laboratory weekly. Laboratory fee. Prerequisite: French 11 or equivalent skill in the language to be determined by a placement test. Open to freshmen. Indivisible course. Mr. Whartenby, in charge Staff.

*13. Oral and Written French.

A third-year course. Admission is subject to approval of the instructor in each semester. The normal sequence is 13a during the spring semester of one year followed by 13b the following fall semester. The two parts of the course are organized as follows.

13A Given in the spring semester.

Analytical study and practice of the elements of communication in French: basic conversation patterns; the sound, rhythm and tone patterns of French pronunciation; review of grammatical topics; exercises in written expression. Conducted in French. Prerequisite: Grade of B— or higher in French 12, or equivalent skill in the language to be determined by a placement test. Open to freshmen. Offered in alternate years. Two regular class periods, one two-hour session and one to two hours in the laboratory per week. Laboratory fee. Mr. King.

13b. Given in the fall semester. Not offered, 1963-64.
Advanced practice of communication in French. Compositions, oral reports, classroom discussion. Conducted in French. Prerequisite: French 13a, or equivalent skill in the language, to be determined by a placement test. Offered in alternate years. Two regular class periods, one two-hour session and one to two hours in the laboratory per week. Laboratory fee. Mr. King.

*14. READINGS IN FRENCH LITERATURE.
A third-year course. The emphasis in the first semester is on reading as communication, with analysis and practice of the techniques of effective reading in French. The emphasis in the second semester is on an understanding of a number of novels and plays selected for their literary excellence and broad appeal. Prerequisite: French 12 or equivalent skill in the language, to be determined by a placement test. Open to freshmen.
Mr. Nicol and Staff.

*Courses 13 and 14 are third-year courses within the meaning of the foreign language requirement for the degree of Bachelor of Arts. Course 14 is offered to meet the needs of the general student; course 13 is designed primarily for the student with particular interest and aptitude for language study who intends to take subsequent courses in literature. Both may be taken for credit.

113. INTRODUCTION TO FRENCH CIVILIZATION.
A selective survey of the history, art, literature and music of France, from the Middle Ages to modern times. An elementary knowledge of French is desirable but not required. Admission is subject to the approval of the instructor. May be counted in fulfillment of the general requirement in fine arts but not of the requirement in foreign language. Offered in alternate years. Mr. Nicol.

114. GENERAL VIEW OF FRENCH LITERATURE.
An interpretation of the main currents of French literature. Each period is studied by concentrating attention on a limited number of works and authors best bringing to focus the characteristics of the period. Conducted in French. Prerequisite: Grade of B— or higher in French 13 or 14, or the equivalent. Mr. King.

123b. ADVANCED LANGUAGE. Not offered, 1963-64.
Introduction to the problems of stylistics with a study of selected grammatical topics. Conducted in French. Prerequisite: Grade of B— or higher in French 13b, or the equivalent. Offered in alternate years. Mr. Nicol.

*151a. THE MIDDLE AGES AND THE RENAISSANCE.
Emphasis is upon developing an understanding of the philosophical, religious and social attitudes of the Middle Ages and the Renaissance, with due attention to the facts of literary history. Conducted in French. Prerequisite: Grade of B— or higher in French 114, or the equivalent. Offered in alternate years. Mr. King.

*152a. CLASSICISM. Not offered, 1963-64.
A study of outstanding literary works, drawn principally but not exclusively from the age of Louis XIV, to illustrate the esthetic and intellectual nature of the classical point of view as it persists in the French thought of various periods. Conducted in French. Pre-

requisite: Grade of B– or higher in French 114, or the equivalent. Offered in alternate years. Mr. Nicol.

*153b. Romanticism and Realism. Not offered, 1963-64.
A study of outstanding literary works, drawn principally but not exclusively from the late 18th and 19th centuries, to illustrate the esthetic and intellectual climates and the literary techniques generally described as romantic or realistic. Conducted in French. Prerequisite: Grade of B– or higher in French 114, or the equivalent. Offered in alternate years. Mr. Nicol.

*154b. The Modern Period.
A study of a few outstanding dramatists, novelists and poets to illustrate the highly varied literary attitudes characteristic of 20th century French literature. Conducted in French. Prerequisite: Grade of B– or higher in French 114, or the equivalent. Offered in alternate years. Mr. Whartenby ~~Mr. Nicol.~~

*For French 151a, 152a, 153b and 154b a certain historical and analytical perspective such as is provided by French 114 is presupposed. These courses are planned so that they need not be taken in chronological order but may be taken at the student's convenience. Attention is given to the social forces and movements underlying the attitudes whose literary manifestations are under study.

Romance Languages 124b. Comparative French and Spanish Phonetics. Not offered, 1963-64
The elements of general phonetics. A detailed study of the pronunciation of French and Spanish. Prerequisites: Grade of B– or higher in French 13a or Spanish 13; elementary knowledge of the other language. Advised for majors who plan to teach either language. Offered at the discretion of the department. Mr. Reid.

Romance Languages 270 (Education 270). The Teaching of Romance Languages.
For complete description, see Education 270. Mr. Rubin ~~Mr. Reid~~ and Staff.

COURSES IN SPANISH

11. Elementary.
A course for beginners, including the elements of grammar, pronunciation and conversational patterns, graded readings and the writing of simple Spanish. Three class periods and one to two hours in the language laboratory per week. Laboratory fee. Open to freshmen. Indivisible course. Mr. Barbera ~~Staff.~~

12. Intermediate.
A review of the elements and further development of basic literacy and of a balanced mastery of all the communication skills; intensive and extensive reading of texts dealing with Spain and Spanish America. An intensive oral approach is used in the classroom. Three class periods and one or two hours in the language laboratory per week. Laboratory fee. Prerequisite: Spanish 11 or equivalent skill in the language, to be determined by a placement test. Open to freshmen. Indivisible course. Mr. Barbera ~~Staff.~~

*13. Oral and Written Spanish. Not offered, 1963-64.
A third-year course. A rapid intensive review of grammar; the elements of phonetics; exercises in composition and pronunciation; conversational practice. Conducted in Spanish.

Admission is subject to the approval of the instructor. Prerequisite: Grade of B– or higher in Spanish 12, or equivalent skill in the language, to be determined by a placement test. Open to freshmen. Offered in alternate years. Two regular class periods, one two-hour session, and one to two hours in the laboratory per week. Laboratory fee.
Mr. Barbera.

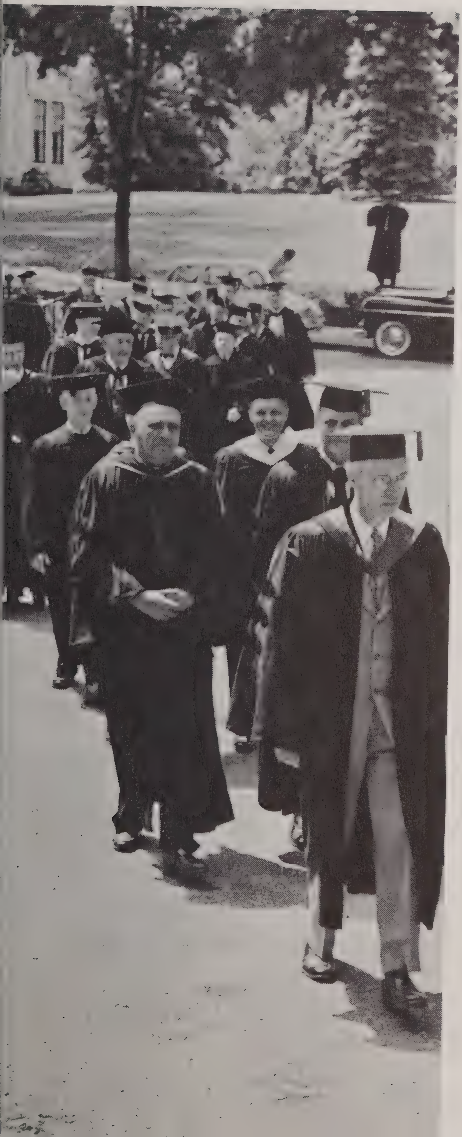
*14. Readings in Spanish and Spanish-American Literature.
A third-year course. The first semester is devoted to Spanish-American literature; the second semester to Spanish works. The emphasis in the first semester is on reading as communication, with analysis and practice of the techniques of effective reading in Spanish. The emphasis in the second semester is on the understanding of a number of major works of the literature of Spain. Prerequisite: Spanish 12 or the equivalent skill in the language, to be determined by a placement test. Open to freshmen. Mr. ~~Reid~~. King

*Courses 13 and 14 are third-year courses within the meaning of the foreign language requirement for the degree of Bachelor of Arts. Course 14 is offered to meet the needs of the general student; course 13 is designed primarily for the student with particular interest and aptitude for language study who intends to take subsequent courses in literature. Both may be taken for credit.

114. The Literature of Spain; The Beginnings.
A detailed study of four outstanding works: *El poema de Mio Cid, El libro de buen amor, La Celestina* and *El Quijote*. Attention is given to political and cultural background. Conducted in Spanish. Prerequisite: Grade of B– or higher in Spanish 13 or 14. or the equivalent. Offered in alternate years. Mr. Barbera.

Romance Languages 124b. Comparative French and Spanish Phonetics. Not offered, 1963-64
For complete description, see Romance Languages 124b under "Courses in French."
Mr. Reid.

Romance Languages 270 (Education 270). The Teaching of Romance Languages.
For complete description, see Education 270. (1963-64) Mr. Rubin ~~Mr. Reid~~ and Staff.



DIRECTORIES

The Faculty

Members of the faculty and officers of instruction for 1962-63 are listed alphabetically with their titles, degrees and years at Clark University. Persons no longer on the faculty but who served during the previous year are included. The President and emeriti are listed first.

President

HOWARD BONAR JEFFERSON, Ph.D., LL.D., L.H.D., Litt.D., President. A.B., Denison University, 1923; Ph.D., Yale University, 1929; LL.D., Denison University, 1948, Hillsdale College, 1952, Northwestern University, 1958; L.H.D., Colgate University, 1951, Assumption College, 1956; Litt.D., College of the Holy Cross, 1962. (1946-)

Emeriti

LEROY ALLSTON AMES, A.M., Professor of English Literature, Emeritus. (1908-44)

SAMUEL J. BRANDENBURG, Ph.D., Professor of Economics and Sociology, Emeritus. (1923-50)

JESSE LUNT BULLOCK, Ph.D., Professor of Chemistry, Emeritus. (1926-59)

LORING HOLMES DODD, Ph.D., L.H.D., Professor of English and Art, Emeritus. (1910-49)

ROBERT STANLEY ILLINGWORTH, A.M., Ed.M., Professor of Speech and Drama, Emeritus. (1931-58)

HOMER PAYSON LITTLE, Ph.D., LL.D., Dean of the College and Professor of Geology, Emeritus. (1922-54)

DAVID POTTER, Ph.D., Professor of Biology, Emeritus. (1924-59)

PERCY MARTIN ROOPE, Ph.D., Professor of Physics, Emeritus. (1921-62)

SAMUEL VAN VALKENBURG, Ph.D., Professor of Geography, Emeritus. (1926-29, 1932-62)

HEINZ WERNER, Ph.D., G. Stanley Hall Professor of Genetic Psychology, Emeritus. (1947-60); Chairman, Board of Directors, Institute of Human Development. (1961-)

Faculty and Officers of Instruction

VERNON AHMADJIAN, Ph.D., Associate Professor of Botany. A.B., Clark University, 1952; A.M., 1956; Ph.D., Harvard University, 1960. (1959-)

KARL OSCAR EMANUEL ANDERSON, Ph.D., Professor of English. A.B., Harvard University, 1927; A.M., 1928; Ph.D., 1942. (1945-)

ROY STUART ANDERSON, Ph.D., Professor of Physics. A.B., Clark University, 1943; A.M., Dartmouth College, 1948; Ph.D., Duke University, 1951. (1960-)

KARL JOHN RICHARD ARNDT, Ph.D., Professor of German. A.M., Washington University, 1928; Ph.D., The Johns Hopkins University, 1933. (1950-)

ROBERT WILLIAM BAKER, Ph.D., Associate Professor of Psychology. A.B., Hobart College, 1947; Ph.D., Clark University, 1953. (1954-)

GEORGE ANTHONY BALKO, JR., M.B.A., Assistant Professor of Economics and Business Administration. M.E., Stevens Institute of Technology, 1947; M.B.A., New York University, 1952. (1956-)

Frederick Emerson Bamford, M.B.A., Assistant Professor of Economics and Business Administration. B.Mus., Boston University, 1954; B.S. in B.A., 1954; M.B.A., 1955. (1961-)

Raymond Edmond Barbera, Ph.D., Associate Professor of Romance Languages. A.B., Brooklyn College, 1947; A.M., University of Arizona, 1948; Doctor en Letras, Universidad Nacional de Mexico, 1949; Ph.D., University of Wisconsin, 1958. (1953-)

Claude Willis Barlow, Ph.D., Professor of Classics. A.B., Amherst College, 1928; A.M., Indiana University, 1930; Ph.D., Yale University, 1935. (1947-)

Tilton Marshall Barron, B.L.S., Librarian. A.B., Colorado College, 1937; B.L.S., Columbia University School of Library Service, 1940. (1954-)

James Franklin Beard, Jr., Ph.D., Professor of English. A.B., Columbia College, 1940; A.M., Columbia University, 1941; Ph.D., Princeton University, 1949. (1955-)

Robert Nelson Beck, Ph.D., Professor of Philosophy. A.B., Clark University, 1947; A.M., Boston University, 1948; Ph.D., 1950. (1948-)

Clemens E. Benda, M.D., Professor (affiliate) of Psychology. M.D., University of Berlin, 1922. (1958-)

Joseph C. Bentley, Ph.D., Assistant Professor of Education. B.A., Brigham Young University, 1959; M.A., University of Minnesota, 1960; Ph.D., 1963. (1963-)

Roger Bibace, Ph.D., Associate Professor of Clinical Psychology. A.B., University of British Columbia, 1949; Ph.D., Clark University, 1957. (1957-)

George Athan Billias, Ph.D., Associate Professor of American History. A.B., Bates College, 1948; A.M., Columbia University, 1949; Ph.D., 1958. (1962-)

Jack William Birch, Ph.D., Professor of Geography. A.B., University of Reading, 1949; Ph.D., 1957. (1960-63)

Charles S. Blinderman, Ph.D., Associate Professor of English. A.B., New York University, 1952; A.M., 1953; Ph.D., University of Indiana, 1957. (1962-)

Daniel Raymond Borg, Ph.D., Assistant Professor of History. A.B., Gustavus Adolphus College, 1953; A.M., Yale University, 1957; Ph.D., 1963. (1961-)

Henry Charles Borger, Jr., Ph.D., Professor of Education, Dean of Students. A.B., Princeton University, 1933; A.M., Columbia University, 1938; Ph.D., 1954. (1950-)

Wesley E. Bryers, A.B., Instructor in Geology. A.B., Rutgers University, 1956. (1961-)

Guy Harvey Burnham, A.M., Instructor in Geography and Cartographer, Graduate School of Geography. A.B., Clark University, 1916; A.M., 1922. (1922-)

George Camougis, Ph.D., Associate Professor of Physiology. B.S., Tufts College, 1952; A.M., Harvard University, 1957; Ph.D., 1958. (1958-)

Robert Francis Campbell, Ph.D., Professor of American History, Dean of the College. A.B., Yale University, 1939; A.M., Columbia University, 1940; Ph.D., 1947. (1946-57; 1960-)

Ernest Capstack, Jr., Ph.D., Visiting Assistant Professor of Chemistry. B.S., Massachusetts Institute of Technology, 1952; M.A., University of Rhode Island, 1954; Ph.D., Brown University, 1959. (1962-)

Deane C. Carson, Ph.D., Visiting Lecturer in Economics. (1962-63)

William Hoyt Carter, Jr., Ph.D., Associate Professor of English. A.B., Middlebury College, 1936; A.M., Harvard University, 1938; Ph.D., 1951. (1949-)

James Madison Coffee, Ed.D., Associate Professor of Education. A.B., Duke University, 1949; A.M., Cornell University, 1950; Ed.D., Harvard University, 1957. (1954-)

Morris Harold Cohen, Ph.D., Associate Professor of Government. A.B., University of Chicago, 1939; Ph.D., 1950. (1947-)

Lydia Perry Colby, Registrar. (1932-)

Samuel Pendleton Cowardin, III, Ph.D., Associate Professor of Fine Arts. A.B., Harvard University, 1943; A.M., 1948; Ph.D., 1963. (1949-)

Walter Hobson Crockett, Ph.D., Associate Professor of Psychology. A.B., University of Kansas, 1947; A.M., 1949; Ph.D., University of Michigan, 1953. (1957-)

Jessie Campbell Cunningham, A.M., Assistant Professor of English. Ph.B., University of Chicago, 1948; A.M., 1952. (1957-)

John A. Davies, Ph.D., Assistant Professor of Physics. B.S., University of Maryland, 1953; M.S., 1954; Ph.D., 1960. (1963-)

Tamara Dembo, Ph.D., Professor of Psychology. Ph.D., University of Berlin, 1930. (1953-)

Thomas Joseph Dolphin, A.B., Director of The Evening College, Director of the Summer School. A.B., Rutgers University, 1951. (1957-)

Ralph I. Dorfman, Ph.D., Professor (affiliate) of Chemistry. B.S., University of Illinois, 1932; Ph.D., University of Chicago, 1934. (1955-)

Juris Draguns, Ph.D., Lecturer in Psychology. B.A., Utica College of Syracuse University, 1954; Ph.D., University of Rochester, 1958. (1963-)

James Stanhope Edwards, A.M., Associate Professor of German. A.B., Brown University, 1936; A.M., 1938. (1947-)

Henry Frandsen, Ph.D., Assistant Professor of Mathematics. B.S., University of Illinois, 1957; M.S., 1959; Ph.D., 1961. (1961-)

Roland John Fuchs, Ph.D., Visiting Associate Professor of Geography. A.B., Columbia University, 1954; A.M., Clark University, 1957; Ph.D., 1958. (1963-)

Minoru Fujimoto, Ph.D., Assistant Professor of Physics. B.S., Osaka University, 1955; Ph.D., University of Southampton, 1959. (1961-63)

Wesley Metcalf Fuller, M.Mu., Assistant Professor of Music. B.Mu., Oberlin Conservatory of Music, 1953; M.Mu., Boston University, 1958. (1963-)

Burton Noble Gates, Ph.D., Research Associate in Botany. A.B., Clark University, 1905; A.M., 1906; Ph.D., 1909. (1954-)

Robert Goldhammer, Ed.M., Assistant Professor of Education. A.B., University of Chicago, 1956; Ed.M., Harvard University, 1957. (1962-63)

Harold Goodglass, Ph.D., Lecturer in Psychology. A.B., College of the City of New York, 1939; A.M., New York University, 1948; Ph.D., University of Cincinnati, 1951. (1956-)

Daniel Gorenstein, Ph.D., Professor of Mathematics. A.B., Harvard University, 1943; Ph.D., 1950. (1951-64)

Rocheleau Zephirin Granger, Jr., A.M. in Ed., Director of Physical Education for Men. A.B., Clark University, 1938; A.M. in Ed., 1939. (1949-)

Sante Graziani, M.F.A., Associate Professor (affiliate) of Fine Arts. B.F.A., Yale University, 1942; M.F.A., 1948. (1958-)

Gerald N. Grob, Ph.D., Associate Professor of American History. B.S., College of the City of New York, 1951; A.M., Columbia University, 1952; Ph.D., Northwestern University, 1958. (1957-)

Gordon T. Gwinn, Ph.D., Associate Professor of Psychology. A.B., University of Arizona, 1942; Ph.D., Yale University, 1948. (1949-)

George Edward Hargest, M.B.A., Associate Professor of Economics and Business Administration. B.S., Temple University, 1933; M.Ed., 1937; M.B.A., Boston University, 1947. (1942-)

M. Evelyn Harriman, M.A. in Ed., Lecturer in Education. B.S. in Ed., Boston University, 1948; M.A. in Ed., 1950. (1956-)

Edward H. Hastings, A.M., Instructor in English. A.B., Wesleyan University, 1946; A.M., Harvard University, 1947. (1950-52; 60-62; 63-)

Seymour Hayden, Ph.D., Associate Professor of Mathematics. A.B., University of Wisconsin, 1947; A.M., Harvard University, 1948; Ph.D., 1963. (1957-)

Sherman Strong Hayden, Ph.D., Professor of International Relations. A.B., Harvard University, 1930; LL.B., 1933; A.M., Columbia University, 1936; Ph.D., 1942. (1946-)

Earl E. Hays, Ph.D., Associate Professor (affiliate) of Physics. A.B., Allegheny College, 1940; Ph.D., Northwestern University, 1949. (1961-)

Serena Sue Hilsinger, A.B., Lecturer in English. A.B., Douglass College, 1959. (1962-)

M. Hazel Hughes, M.Ed., Dean of Women, Director of Physical Education for Women. B.Ed., Clark University, 1944; M.Ed., Boston University, 1949. (1942-)

Robert Mooers Hyde, A.M., Executive Vice President. A.B., Rutgers University, 1947; A.M., University of Pennsylvania, 1949. (1954-)

Vernon Jones, Ph.D., Professor of Educational Psychology. B.A., University of Virginia, 1920; M.A., 1920; M.A., Columbia University, 1924; Ph.D., 1926. (1926-)

Henry Donaldson Jordan, Ph.D., Professor of English History. A.B., Harvard University, 1918; A.M., 1922; Ph.D., 1925. (1931-)

Bernard Kaplan, Ph.D., Associate Professor of Psychology. A.B., Brooklyn College, 1948; A.M., Clark University, 1950; Ph.D., 1953. (1955-)

Robert Kastenbaum, Ph.D., Lecturer in Psychology. B.A., Long Beach State College, 1954; Ph.D., University of Southern California, 1959. (1959-)

Robert W. Kates, Ph.D., Assistant Professor of Geography. A.M., University of Chicago, 1960; Ph.D., 1962. (1962-)

Gerson Kegeles, Ph.D., Professor of Chemistry. B.S., Yale University, 1937; Ph.D., 1940. (1951-)

John F. Kennison, Ph.D., Assistant Professor of Mathematics. Ph.D., Harvard University, 1963. (1963-)

Frederick W. Killian, LL.B., Associate Professor of Sociology. LL.B., New York University, 1925; A.B., 1934. (1947-)

Jesse Fannin King, A.M., Associate Professor of Romance Languages. A.B., Pomona College, 1936; A.M., Harvard University, 1937. (1946-)

Werner Koella, M.D., Lecturer in Psychology. M.D., University of Zurich, 1942. (1958-63)

William A. Koelsch, Visiting Assistant Professor of Geography. (Second Semester). (1962-63)

Roger P. Kohin, Ph.D., Assistant Professor of Physics. B.Sc., Notre Dame University, 1953; Ph.D., University of Maryland, 1961. (1962-)

Donald Max Krus, Ph.D., Associate Professor of Psychology. B.A., Drew University, 1949; A.M., Clark University, 1951; Ph.D., 1957. (1958-)

Dwight Erwin Lee, Ph.D., Jacob and Frances Hiatt Professor of European History, Dean of the Graduate School. A.B., University of Rochester, 1921; A.M., 1922; Ph.D., Harvard University, 1928. (1927-)

Theodore Leventhal, Ph.D., Assistant Professor (affiliate) of Psychology. A.B., Brooklyn College, 1948; Ph.D., University of Kansas, 1953. (1955-63)

Jessie L. Lightner, M.A., Lecturer in English. A.B., University of Chicago, 1956; M.A., Brandeis University, 1959. (1962-63)

Herbert Lipton, Ph.D., Assistant Professor (affiliate) of Psychology. A.B., Rutgers University, 1949; A.M., Clark University, 1951; Ph.D., 1954. (1956-)

James Ackley Maxwell, Ph.D., Professor of Economics. A.B., Dalhousie University, 1921; A.M., Harvard University, 1923; Ph.D., 1927. (1924-)

Joseph H. McFarland, Ph.D., Assistant Professor (affiliate) of Psychology. A.B., Brandeis University, 1955; A.M., Clark University, 1957; Ph.D., 1960. (1961-)

Frederick Eugene Melder, Ph.D., Professor of Economics. B.B.A., University of Washington, 1926; M.A., 1931; Ph.D., University of Wisconsin, 1936. (1937-46; 1950-)

George Henry Merriam, Ph.D., Lecturer in American History, Director of Admissions. A.B., Clark University, 1944; A.M., Brown University, 1947; Ph.D., Clark University, 1961. (1952-64-Feb.)

David M. Moriarty, M.D., Professor (affiliate) of Clinical Psychology. M.D., Boston University, 1947. (1960-)

John Hubert Muller, Ph.D., Associate Professor of Physics. A.B., Princeton University, 1949; M.S., Michigan State University, 1954; Ph.D., 1958. (1962-)

Raymond Edward Murphy, Ph.D., Professor of Economic Geography. B.S., Missouri School of Mines and Metallurgy, 1923; M.S., University of Wisconsin, 1926; Ph.D., 1930. (1946-)

Herbert J. Nerjes, A.M., Assistant Professor of German. A.B., Brown University, 1957; A.M., Yale University, 1958. (1961-63)

William Robert Nes, Ph.D., Associate Professor of Biochemistry. B.A., University of Oklahoma, 1946; M.S., University of Virginia, 1948; Ph.D., 1950. (1958-)

Howard White Nicholson, Ph.D., Associate Professor of Economics. B.A., Oberlin College, 1942; A.M., Harvard University, 1948; Ph.D., 1950. (1958-)

Theodore Nicol, Ph.D., Associate Professor of Romance Languages. A.B., Clark University, 1926; A.M., Harvard University, 1928; Ph.D., 1933. (1946-)

Rudolph Fink Nunnemacher, Ph.D., Professor of Zoology. B.S., Kenyon College, 1934; A.M., Harvard University, 1935; Ph.D., 1938. (1939-)

Philip Gilbert Olson, Ph.D., Assistant Professor of Sociology. A.B., University of Arizona, 1954; A.M., 1956; Ph.D., Purdue University, 1959. (1961-)

Myrna Schmidt Pearson, A.M., Assistant Professor of Chemistry. A.B., University of Pennsylvania, 1958; A.M., Columbia University, 1959. (1963-)

JOHN T. KRUMPELMANN, PH.D., S
1963-64

Leslie Phillips, Ph.D., Professor (affiliate) of Clinical Psychology. A.M., University of Chicago, 1944; Ph.D., 1949. (1946-)

* Relly Raffman, A.M., Associate Professor of Music. A.B., Dartmouth College, 1943; A.M., Columbia University, 1949. (1954-)

* J. Richard Reid, Ph.D., Professor of Romance Languages. A.B., Swarthmore College, 1935; A.M., Harvard University, 1936; Ph.D., 1943. (1944-)

* John Theodore Reynolds, Ph.D., Associate Professor of Microbiology. B.S., Boston College, 1951; M.S., University of Massachusetts, 1954; Ph.D., 1962. (1956-)

Harris Rosenkrantz, Ph.D., Associate Professor (affiliate) of Biology. A.B., Brooklyn College, 1943; M.S., New York University, 1946; M.S., Cornell Medical College, 1948; Ph.D., Tufts Medical School, 1952. (1959-)

Mordecai Samuel Rubin, Ph.D., Assistant Professor of Romance Languages. A.B., Rutgers University, 1952; Ph.D., University of Maryland, 1961. (1962-)

Dorothea Schaefer, Ph.D., Assistant Professor of German. Ph.D., Universitat Goettingen, 1960. (1963-)

Hans Jürgen Schlütter, Ph.D., Assistant Professor of German. Ph.D., Universitat Kiel, 1961. (1963-)

Neil Rolf Schroeder, Ph.D., Assistant Professor of English. A.B., Brown University, 1952; Ph.D., Yale University, 1962. (1960-)

Arthur Joseph Serra, B.S., Assistant in Physical Education. B.S., Springfield College, 1956. (1960-)

Dayton Dorris Shepherd, A.M., Lecturer in Education. B.S., Southwest Missouri State College, 1946; A.M., Yale University, 1950. (1954-)

Clifford K. Shipton, Ph.D., Professor (affiliate) of American History. B.S., Harvard University, 1926; A.M., 1927; Ph.D., 1933. (1961-)

Rodman Eldredge Snead, Ph.D., Assistant Professor of Geography. B.A., University of Virginia, 1953; A.M., Syracuse University, 1955; Ph.D., Louisiana State University, 1963. (1961-)

Robert John Stairs, B.S., Assistant in Physical Education. B.S., University of Rhode Island, 1956. (1959-)

John Sunapee Stubbe, Ph.D., Associate Professor of Mathematics. B.S., University of New Hampshire, 1941; M.S., Brown University, 1942; Ph.D., University of Cincinnati, 1945. (1949-)

Thomas Tamotsu Sugihara, Ph.D., Professor of Chemistry. A.B., Kalamazoo College, 1945; S.M., University of Chicago, 1951; Ph.D., 1952. (1953-)

Stanley Sultan, Ph.D., Associate Professor of English. A.B., Cornell University, 1949; A.M., Boston University, 1950; Ph.D., Yale University, 1955. (1959-)

Brian Sutton-Smith, Ph.D., Visiting Associate Professor of Psychology. M.A., University of New Zealand, 1947; Ph.D., 1953. (1963-)

Edward N. Trachtenberg, Ph.D., Associate Professor of Chemistry. A.B., New York University; A.M., Harvard University, 1951; Ph.D., 1953. (1958-)

Aldo Peter Truant, Ph.D., Associate Professor (affiliate) of Biology. A.B., University of Western Ontario, 1944; Ph.D., Yale University, 1949. (1959-)

RICHARD TURYN, A.M., LECTURER IN MATHEMATICS
A.B. AND A.M., HARVARD UNIVERSITY. (1963-)

Roger Carleton Van Tassel, Ph.D., Associate Professor of Economics. A.B., Union College, 1947; A.M., Cornell University, 1950; Ph.D., Brown University, 1956. (1954-)

Anthony Varjabedian, M.D., Lecturer in Psychology. A.B., Clark University, 1941; M.D., Yale University, 1944. (1954-)

Seymour Wapner, Ph.D., G. Stanley Hall Professor of Genetic Psychology. A.B., New York University, 1939; A.M., University of Michigan, 1940; Ph.D., 1943. (1948-)

Henry John Warman, Ph.D., Professor of Geography. B.S. in Ed., Bloomsburg State Teachers College, 1932; Ed.M., Temple University, 1938; Ph.D., Clark University, 1945. (1943-)

Joseph Weinreb, M.D., Professor (affiliate) of Psychology. A.B., Vanderbilt University, 1931; M.D., 1935. (1947-)

Wen-Yang Wen, Ph.D., Assistant Professor of Chemistry. Ph.D., University of Pittsburgh, 1958. (1962-)

Harry Allen Whartenby, Jr., Ph.D., Assistant Professor of Romance Languages. B.A., Temple University, 1950; M.A., University of North Carolina, 1957; Ph.D., 1962. (1963-)

Jefferson A. White, A.M., Assistant Professor of Philosophy. B.A., Baylor University, 1952; B.D., Yale University, 1957; A.M., Yale University, 1960. (1961-)

Morton Wiener, Ph.D., Associate Professor of Psychology. B.S., College of the City of New York, 1949; M.S., 1950; Ph.D., University of Rochester, 1953. (1957-)

Joachim F. Wohlwill, Ph.D., Associate Professor of Psychology. A.B., Harvard College, 1949; Ph.D., University of California, 1957. (1958-)

Peter H. Wolff, M.D., Lecturer in Psychology. M.D., University of Chicago, 1950. (1961-)

Allan M. Zwickel, Ph.D., Assistant Professor of Chemistry. A.B., Cornell University, 1956; Ph.D., University of Chicago, 1959. (1961-)

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Appointments From Clark University Funds, 1962-63

Alumni Association Fellow

Albert Mehrabian, Psychology. B.S., Massachusetts Institute of Technology, 1961.

George S. Barton Scholars

Paul R. Jolicoeur, Economics. B.S., Worcester State College, 1960.

Marcia A. Savage, Education. A.B., Clark University, 1961.

Eliza D. Dodge and John White Field Scholar

Nathan M. Afari, Education. Teacher's Certificate, Presbyterian Training College, Ghana; Certificate in Educational Studies, University of Edinburgh, 1961.

Joseph F. Donnelly Fellows

John A. Donovan, Economics. A.B., Stonehill College, 1961.

Conrad M. Ouellette, Economics. A.B., University of Maine, 1958.

Ransford Palmer, Economics. B.S. in B.A., Marquette University, 1961.

Pedro A. Parilla, Geography. A.B., University of Puerto Rico, 1959; A.M., 1960.

John F. Rooney, Jr., Geography. B.S.Ed., Illinois State Normal University, 1961; M.S., 1962.

Tong-Chin Rhee, History. A.B., Seoul National University, 1959; M.P.A., 1961; M.A., Lehigh University, 1962.

Theodore Novick, Psychology. A.B., Columbia University, 1958.

Austin S. Garver Scholars

Laura Camben, Geography. B.S., New York University, 1962.

Peter G. Goheen, Geography. A.B., McMaster University, 1962.

Mrs. Lillian V. Gruel, Geography. A.B., Towson State Teachers College, 1962.

David R. Heisel, History. A.B., Pace College, 1962.

James W. Leedman, History. LL.B., University of Western Australia, 1959; A.B., 1960.

Mrs. Gloria L. Mayfield, History. B.S.Ed., Bridgewater State College, 1958; A.M., University of San Francisco, 1962.

Charles H. Thurber Scholar

Lonnie R. Supnick, Psychology. A.B., City College of New York, 1961.

Appointments From Other Funds, 1962-63

National Institute Of Mental Health

Nelson M. Butters, Psychology. A.B., Boston University, 1960; M.A., Clark University, 1962.

Bruce Denner, Psychology. B.S., City College of New York, 1960; M.A., Clark University, 1961.

Harold Kellner, Psychology. B.S., Harvard University, 1959; M.A., Clark University, 1962.

Bernhard Kempler, Psychology. A.B., Brandeis University, 1958; M.A., Clark University, 1962.

Willis Overton, Psychology. A.B., Boston University, 1960; M.A., 1961.

Melvyn Schnall, Psychology. B.S., Union College, 1959; M.A., Clark University, 1961.

National Science Foundation

Anna M. Guyette, Psychology (Cooperative Graduate Fellow). A.B., University of New Hampshire, 1959; M.A., 1961.

Nancy E. Henry, Chemistry (Summer Fellow). A.B., Clark University, 1960.

Edward D. Otremba, Chemistry (Summer Fellow). B.S., Albany State College, 1958.

United States Steel Foundation

Carolyn G. Ryan, Geography. B.S.Ed., Bridgewater State College, 1960.

Teaching Assistants and Teaching Assistant Scholars, 1962-63

Abramson, Ronald D., Biology. A.B., Antioch College, 1962.

Allen, George R., Physics. B.S., Muhlenberg College, 1962.

Brams, Marvin R., Economics and Sociology. B.S. in B.A., Northeastern University, 1959; M.B.A., 1962.

Cederlund, Albert, Economics and Sociology. A.B., Clark University, 1952; M.S., Columbia University, 1957.

Christopher, Mrs. Linda G., Chemistry. A.B., Barnard College, 1962.

Christopher, Peter R., Mathematics. A.B., Clark University, 1959.

Cobb, Mrs. Barbara D., History, Government and International Relations. A.B., Wellesley College, 1933; A.M., Tufts University, 1934.

DeFeudis, Francis V., Biology. B.S., Miami University, 1959.

Doring, George P., Education-Romance Languages. A.B., Brandeis University, 1961.

Farrell, Marcus J., Biology. A.B., St. Anselm's College, 1960.

Goldsmith, Bernard, History, Government and International Relations. A.B., University of Michigan, 1950.

Harting, Carol R., History, Government and International Relations. A.B., Anderson College, 1960; A.M., Clark University, 1962.

Johnson, Roger, Economics and Sociology. (Second semester) A.B., Antioch College, 1947; M.A., Columbia University, 1960.

Kim, Dae Mann, Physics. B.S., Seoul National University, 1960.

Kumar, Santosh, Physics. B.S., St. Andrew's College, India, 1959.

Lee, Chun-meei, Chemistry. B.Sc., Taiwan Normal University, 1961.

Lee, Melissa, Chemistry. A.B., Clark University, 1962.

Lindblad, Karl F., Mathematics. A.B., Clark University, 1962.

Lonnroth, Nancy M., Education-Romance Languages. A.B., Clark University, 1961.

Lopriore, John, Biology. B.Sc., Suffolk University, 1962.

McGivney, Raymond J., Jr., Mathematics. A.B., Clark University, 1962.

Mahadevan, Jayaraman, Physics. B.Sc., Madras University, 1951.

Mehrabian, Albert, Psychology. B.Sc., Massachusetts Institute of Technology, 1961; M.Sc., 1961.

Novick, Theodore, Psychology. B.S., Columbia University, 1958.

Oberhauser, David, Chemistry. B.S., Boston College, 1961; M.S., College of the Holy Cross, 1962.

Pannesi, Patricia, Biology. B.S.Ed., Bridgewater State College, 1961.

Perry, Robert J., Mathematics. A.B., Clark University, 1962.

Ray, Richard A., Education-Romance Languages. A.B., St. Michael's College, 1962.

Raymond, Nathaniel C., Economics and Sociology. (First semester)

Schofield, Edmund A., Biology. A.B., Clark University, 1962.

Sia, Anna Chin, Mathematics. B.S. Com. Ed., University of the East, 1955; B.S.E., 1957; M.A. in Ed., Clark University, 1962.

Smith, Stanley M., Education-Romance Languages. A.B., Washington College, 1962.

Supnick, Lonnie R., Psychology. A.B., City College of New York, 1961.

Teft, Leon W., Psychology. A.B., University of Bridgeport, 1961.

Thirwall, Anthony P., Economics and Sociology. A.B., Leeds College, 1962.

Wheaton, Donald J., Economics and Sociology. B.S. in B.A., Northeastern University, 1959; A.M., Clark University, 1962.

White, Warren, Psychology. A.B., Fresno State College, 1960.

Whitehead, Herman W., Chemistry. (First semester) A.B., Atlantic Union College, 1962.

Wilson, Robert W., Chemistry. B.S., State University College of Education at Oswego, N. Y., 1962.

Yamashiro, Lennie Nell, Education-Romance Languages. A.B., Atlantic Union College, 1960.

Yedinak, Peter D., Physics. A.B., Union College, 1962.

Zavisza, Daniel M., Chemistry. B.S., College of the Holy Cross, 1960.

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Lloyd Anderson, LL.B. (1962-)	Worcester, Mass.
C. Harry Kuniholm, A.B. (1962-)	Gardner, Mass.
Samuel N. Behrman, A.M., Litt.D. (1962-)	New York, N. Y.
Chester Bland, A.M. (1963-)	West Hartford, Conn.

Emeriti

Frank L. Adams, A.B. (1938-1961)	Fort Lauderdale, Fla.
Harry C. Coley (1948-1962)	West Boylston, Mass.
Francis H. Dewey, Jr., LL.B. (1934-1962)	Worcester, Mass.
Samuel H. Dolbear, Sc.D. (1940-1961)	New York, N. Y.

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George H. Merriam, Ph.D., *Director of Admissions*
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Thomas M. Dolan, A.M.Ed., *Assistant Director of Admissions, College Financial Aid Officer*
Henry L. Signor, A.B., *Alumni Secretary*
John E. Snow, *Manager, Printing Department*

Summary of Enrollment for 1962-63

	First Semester			*Second Semester*		
	Men	*Women*	*Total*	*Men*	*Women*	*Total*
Undergraduates						
Freshmen	152	92	244	144	92	236
Sophomores	154	84	238	137	82	219
Juniors	192	89	281	178	83	261
Seniors	109	59	188	102	49	151
TOTAL	607	324	931	561	306	867
Graduate Students	159	64	223	149	63	212
Special Students	17	4	21	14	4	18
TOTALS	783	392	1175	724	373	1097
Evening College*	562	329	891	602	302	904
Total Students	1345	721	2066	1326	675	2001
Less duplications	38	28	66	116	46	162
Net Totals	1307	693	2000	1210	629	1839

Summer School—1961: 461

**Does not include those enrolled for non-credit courses.*

SUMMARY OF DEGREES FOR 1963

DEGREES IN COURSE	
BACHELOR OF ARTS	157
BACHELOR OF SCIENCE IN BUSINESS ADMINISTRATION	21
BACHELOR OF BUS. ADMINISTR.	1
BACHELOR OF SCIENCE IN BUS. ADMINISTR. (EVENING COLLEGE)	11
BACHELOR OF SCIENCE IN GENERAL STUDIES (EVENING COLLEGE)	18

DEGREES IN COURSE	
MASTER OF ARTS	40
MASTER OF ARTS IN EDUC.	16
DOCTOR OF PHILOSOPHY	14

HONORARY DEGREES	
DOCTOR OF LAWS	2
DOCTOR OF LETTERS	1
DOCTOR OF SCIENCE	1

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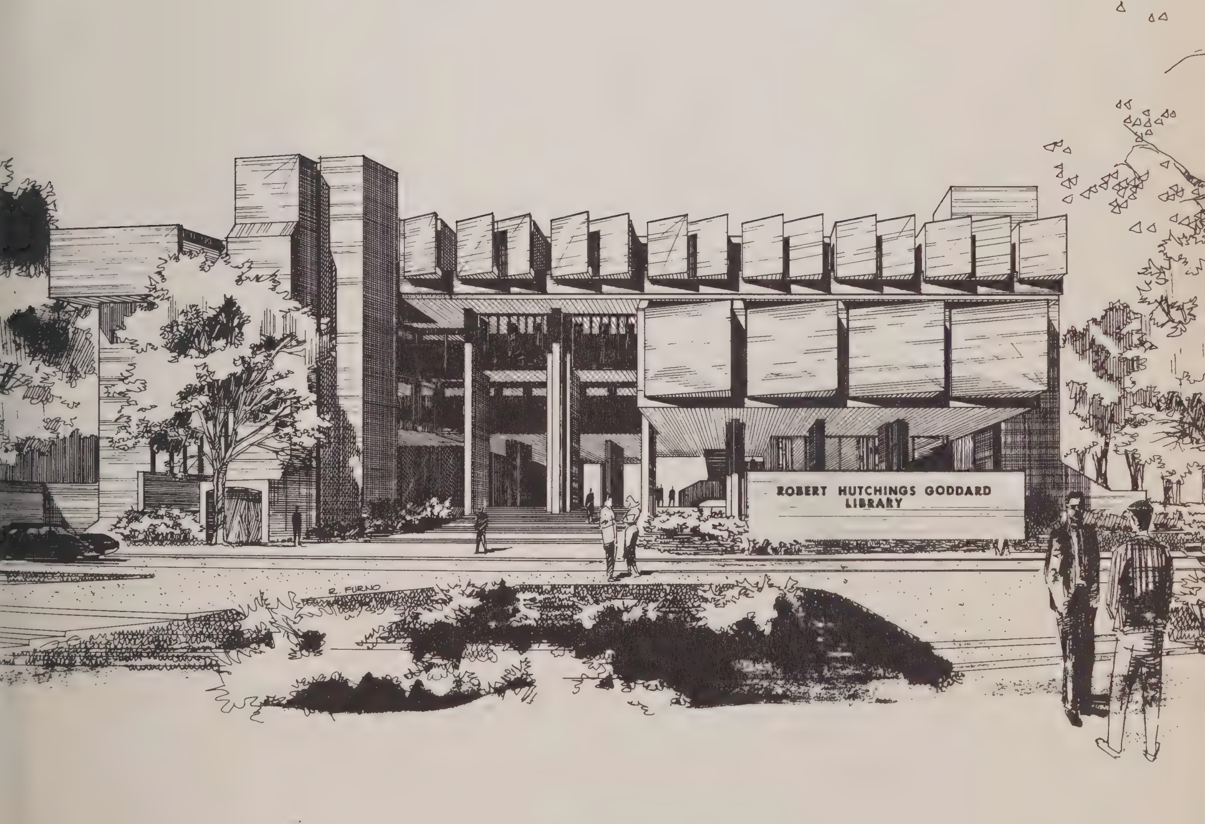
GENERAL CATALOG 1964/1965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The Cover

Clark University is proud that its new library will be named the ROBERT HUTCHINGS GODDARD LIBRARY, in honor of America's space pioneer, Clark alumnus, teacher, scholar, scientist. As envisioned in Clark University's *Campus of Tomorrow,* the ROBERT HUTCHINGS GODDARD LIBRARY, when completed, will be located at the center of the campus. The building will be created by John M. Johansen, New Canaan, Connecticut, architect.

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Clark University Bulletin

WORCESTER, MASSACHUSETTS 01610

General Catalog 1964/65

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Financial Aid:	Mr. Thomas M. Dolan, Financial Aid Officer
Graduate School Affairs:	Dr. Dwight E. Lee, Dean of the Graduate School
Admission to the Graduate School:	Dr. Dwight E. Lee, Dean of the Graduate School or Chairman of the Graduate Department concerned
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University Address:	950 Main Street, Worcester, Massachusetts, 01610
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Academic Calendar for 1964-65

1964

Wednesday, September 9	Freshman orientation begins.
Monday, September 14	Upperclass registration.
Tuesday, September 15	First classes.
Monday, October 12	Columbus Day. Not a holiday.
Friday, October 30	Last day for receiving applications for admission to candidacy for the degree of Doctor of Philosophy in June, 1965.
Monday, November 9	Mid-semester reports due at Registrar's Office at 9 a.m.
Wednesday, November 11	Veteran's Day. Not a holiday.
Wednesday, November 25	Beginning of Thanksgiving recess at close of classes.
Monday, November 30	Thanksgiving recess ends at 8:30 a.m.
Saturday, December 19	Beginning of Christmas recess at close of classes.

1965

Monday, January 4	End of Christmas recess at 8:30 a.m.
Monday, January 11	No classes.
Tuesday, January 12	No classes.
Wednesday, January 13	Semester examinations begin.
Saturday, January 23	Mid-year recess begins at close of examinations.
Monday, February 1	Second semester registration.
Tuesday, February 2	Second semester classes begin.
Friday, February 5	Last day for receiving applications for admission to candidacy for the degrees of Master of Arts and Master of Arts in Education in June, 1965.
Monday, February 22	Washington's Birthday. Not a holiday.
Monday, March 22	Mid-semester reports due at Registrar's Office at 9 a.m.
Saturday, March 27	Beginning of spring recess at close of classes.
Monday, April 5	End of spring recess at 8:30 a.m.
Monday, May 10	Dissertations for the degree of Doctor of Philosophy due at Registrar's Office at 9 a.m.
Monday, May 17	Theses for degrees of Master of Arts and Master of Arts in Education due at Registrar's Office at 9 a.m.
Monday, May 17	No classes.
Tuesday, May 18	No classes.
Wednesday, May 19	Semester examinations begin.
Sunday, May 30	Memorial Day.
Monday, May 31	A holiday.
Sunday, June 6	Commencement Day.
Monday, September 13	Registration Day for 1965-66.

THE INSTITUTION

General Information

President:	Dr. Howard B. Jefferson
Corporate Name:	Trustees of Clark University
Incorporation:	1887
Function:	Independent university of liberal arts and business administration for men and women
Degrees Conferred:	Bachelor of Arts Bachelor of Science in Business Administration Bachelor of Science in General Studies Master of Arts Master of Arts in Education Master of Business Administration Doctor of Education Doctor of Philosophy
Enrollment:	1238
Faculty:	91
Endowment:	Book Value: $7,408,771.72 Market Value: $13,007,649.17
Library:	250,000 volumes 50,000 maps and charts

THE CLARK SCARLET

NO SMOKING
EXIT

History of the University

In February of each year, Clark University celebrates Founders' Day. This custom commemorates the beginning of the University chiefly through the efforts of two men, Jonas Gilman Clark, a sagacious merchant and businessman for whom the University is named, and Dr. Granville Stanley Hall, an educator of breadth and vision.

Mr. Clark, a native of Worcester environs, became wealthy during the California Gold Rush by supplying miners and others with manufactured goods. He increased his personal fortune through wise business dealings initiated after his return to the East at the end of the Civil War. He later returned to Worcester where he established a residence and became interested in civic affairs. It was during this period of his life that he decided to endow an institution of higher learning. His last years were largely devoted to the project. In this, he was assisted by his wife, Susan, and a group of prominent Worcester citizens, including George F. Hoar, a United States Senator from Massachusetts, and General Charles Devens.

In 1887, the Trustees of Clark University were incorporated. Construction started that year on a main building, known today as Jonas G. Clark Hall, and the Science Building. Dr. Hall was appointed the first president of the university. He had been a professor of philosophy, psychology, and education at The Johns Hopkins University and had already established his reputation as a vigorous and original scholar.

Recognizing the need for graduate institutions in the United States (there was at that time only one titled graduate school in the United States—The Johns Hopkins University), President Hall began the organization of an educational institution which would be solely concerned with graduate study and research. As a result, Clark University became the second graduate school established in the United States and for 13 years operated only as a graduate school.

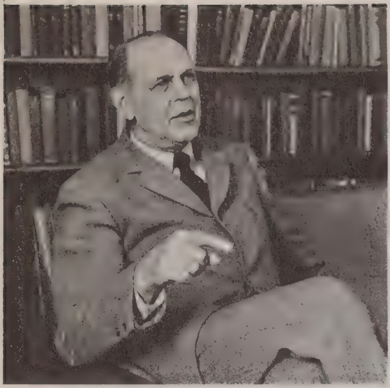
This unusual educational idea attracted the attention of a number of brilliant and original scholars who, upon President Hall's urging, joined the Clark University faculty. They constituted one of the most outstanding communities of scholars this country had then seen. The first students entered the university in 1889 and its first graduates received diplomas in 1891. In 1900, Clark University was one of the 14 charter members of the Association of American Universities. The brilliance of both teachers and students soon established the scholarly reputation of the university.

While Mr. Clark supported President Hall's concept of graduate education, he was also interested in an undergraduate college for men and particularly those men who had limited financial resources. Accordingly, a codicil to his will, effective upon his death in 1900, provided for an undergraduate college with a three-year curriculum.

In compliance with the codicil, the trustees established Clark College. It was to have an administration and faculty distinct from those of the graduate school. Carroll Davidson Wright, then serving as the first United States Commissioner of Labor, was selected as the first president of Clark College. Rufus C. Bentley was named by the trustees as the first Dean of Clark College.

From its beginning, Clark College had an educational philosophy which was marked by seriousness of purpose and hard work. Inasmuch as the bachelor's degree was granted after three years of study, as opposed to the more common four-year curricula of the day, the student carried a heavy program of study. There were intramural contests rather than intercollegiate sports and extracurricular activities were at a minimum. Though entrance requirements were informal, a high standard of performance was necessary to remain in college.

The educational program formulated for Clark College by President Wright and Dean Bentley complemented the already-established program of the graduate school. It was only a matter of time before the undergraduate college and



the graduate school, then associated but distinct, became one educational and administrative unit.

President Wright, who died in 1909, was succeeded by Edmund Clark Sanford, a professor of psychology in the graduate school. President Hall resigned in 1920 and President Sanford felt the time was ripe to unite the undergraduate college and graduate school. He resigned from the presidency to return to teaching and scholarship, leaving the field open for reorganization of the two entities under a single president. This the trustees decided to do and cast about for a man who would become the president of Clark University, which henceforth would include both the graduate and the undergraduate divisions.

In 1920, Wallace Walter Atwood, a professor of physiography at Harvard University, was selected by the trustees as president. During his tenure, there were significant changes in both the educational program and the physical plant. There was a reorganization of the graduate school and undergraduate college faculties and administrations into a single unit. The three-year curriculum leading to the bachelor of arts degree was increased to four years. The Graduate School of Geography was founded. Participation in intercollegiate activities, including athletics was encouraged. Additions to the physical plant included a men's dormitory, an athletic field, a gymnasium, a library tower and an auditorium. The latter was named Atwood Hall in honor of the president.

In 1941, the Division of Business Administration was established. Also, in 1941, Clark University became co-educational when the trustees voted to start the Women's College of the university.

President Atwood retired in 1946 after 26 years in office. His successor was Howard Bonar Jefferson, a professor of philosophy and Director of the School of Philosophy and Religion at Colgate University.

Under the vigorous leadership of Dr. Jefferson, the university has continued to take great strides. In 1953, a chapter of Phi Beta Kappa, the national liberal arts honor society, was established at Clark University. Courses in mathematics leading to the master's degree were re-established.

In 1953, The Evening College of Clark University was organized as an institution for adult learning. It provides university education for adults and offers an opportunity for persons to earn a bachelor's degree exclusively by evening study. In addition, it frequently organizes non-credit courses, institutes and seminars as a community service. In 1962, a program leading to the degree of Master of Business Administration was started by The Evening College.

In 1958, the Institute of Human Development was established as an adjunct of the Department of Psychology. A center of psychological study, its purpose is to develop an all-inclusive concept of human development. In 1964, the center was renamed the Heinz Werner Institute of Developmental Psychology, in honor of the late Dr. Heinz Werner, G. Stanley Hall Professor of Genetic Psychology, emeritus, who served as chairman and as a director of the Institute until his death.

During Dr. Jefferson's tenure, the university has almost doubled its physical plant. A new chemistry laboratory was opened in September, 1958. In the following year, two new dormitories and a student center were opened. The student center was named in honor of Dr. Jefferson. In addition, the university has purchased a number of buildings for use as dormitories, faculty apartments and a conference center.

Doctoral programs in chemical-physics and education were inaugurated in 1961 and 1962, respectively. A doctoral program in biology was re-established in 1962 and the Evening College began a master's program in business administration. Geology became a major in 1963 and music in 1964.

Today, one can receive instruction leading to the degree of Doctor of Philosophy in biology, chemistry, chemical physics, economics, geography, history and international relations, and psychology. A Doctor of Education degree is also offered. Master's degrees can be obtained in these fields and also in business administration, government, mathematics, physics, and sociology. The undergraduate may take courses in these fields and, in addition, in classics, comparative literature, English, fine arts, geology, German, music, philosophy, Romance languages, and Russian.

Worcester and the University

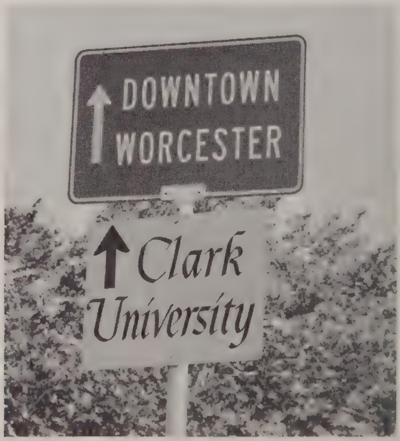
When plans for the new university were taking shape in Mr. Clark's mind, he enlisted the aid of a group of far-sighted and influential Worcester citizens from whom, later, the majority of his original board of trustees was chosen. In this was set a pattern for cooperation between the university and the community which has persisted throughout the history of the institution.

The intellectual life of the city has been strengthened by the contributions of the faculty and of distinguished guests whom the university has brought to Worcester. Members of the staff have served local institutions both public and private in many ways, and a variety of university programs help to enrich the cultural life of Worcester.

The college has opened the door to higher education for hundreds to whom the opportunity would have been denied if they had been forced to seek it elsewhere. The Graduate School has aided more gifted students to proceed to the highest levels of intellectual endeavor. Particularly noteworthy has been the service to teachers in the public school system. Finally, the Evening College has greatly widened educational opportunities in the community.

In turn, the university has benefited by the support, both financial and intangible, which it has received from the citizens of Worcester. The interchange of services and ideas with the staffs of other Worcester institutions and the opportunity to use their libraries on a reciprocal basis have been invaluable.

The university is conscious that it is a part of the community and that, as such, it has both obligations and benefits. Its steadfast purpose is to strengthen the bonds of mutual interdependence and cooperation.



The Campus

UNIVERSITY CAMPUS

Clark is an urban institution situated close to the heart of Worcester. Its educational and administrative activities are located on a compact campus near a major city park and city transportation lines. On adjacent properties facing the campus are University dormitories, apartments, infirmary and the residences of the President and Dean of Students. Clay tennis courts and a running track are nearby as well as a larger athletic field, used for soccer and baseball. A number of other University residences and centers are located near campus. In addition, the University owns a tract of nearly 20 acres, known as the Hadwen Arboretum, a few miles from campus. Nearby colleges include Worcester Polytechnic Institute, Assumption College and the College of the Holy Cross. The famed Worcester Art Museum is also located nearby.

CLARK HALL

The first building erected on the campus was Jonas G. Clark Hall, a four-story granite and brick structure in the center of the campus. It houses the offices of the Deans, Registrar, Bursar and Treasurer as well as those of the Evening College, Summer School, Placement Office, Psychological Clinic and Admissions Office. In addition, it contains many of the offices and classrooms of the departments of instruction, the Women's Gymnasium, Language Laboratory, and the Heinz Werner Institute of Developmental Psychology—an adjunct of the Psychology Department.

SCIENCE BUILDING

Clark's second oldest building is the Science Building, site of experimentation by Dr. Robert H. Goddard, "father of the space age," and Dr. Albert A. Michelson, America's first Nobel

Prize winner. One wing of the building and a portion of its midsection has been remodeled to provide new research and instruction facilities for the Biology Department. The opposite wing of the same building also has undergone a less intensive remodeling for the Physics Department. Between these two oldest Clark buildings is one of its newest—Jeppson Laboratory. Completed in 1958, this building has completely modern research and instruction facilities for the Chemistry Department. It contains Johnson Hall, a multipurpose lecture hall seating 174 persons, and Kraus Library, specializing in chemical periodicals. Standing at the opposite corner of the main campus is the University Library, which, besides its large book collection, has one of the most extensive geographical map and chart collections in the United States. The building also has a music room and language center with appropriate records and literature. Attached to the north end of the University Library is the Library Tower, built in 1939 to provide space for the growing library collection. An elevator offers access to eight levels of stacks in the tower. The lower portion of the tower contains the stage of Atwood Hall, an 800-seat auditorium used for student assemblies, lectures, concerts and other University functions. Atwood Hall also contains the Blue Room for smaller lectures and meetings, and the offices and classrooms of the Fine Arts Department. Site of America's first and only Graduate School of Geography, this building also contains the offices of the President, Vice President and other administrative officers. It also contains the editorial offices of *Economic Geography,* a quarterly publication of Clark University. The Music Department is located in newly-remodeled facilities in Estabrook Hall containing practice and seminar rooms as well as offices of instruction. Estabrook Hall also houses the Department of German, the University Computer Center, and offices for student organizations. More than 200 men students living on the campus are quartered in Wright Hall. Completed in 1959, this fireproof brick dormitory provides both double and single rooms

JEPPSON LABORATORY

UNIVERSITY LIBRARY

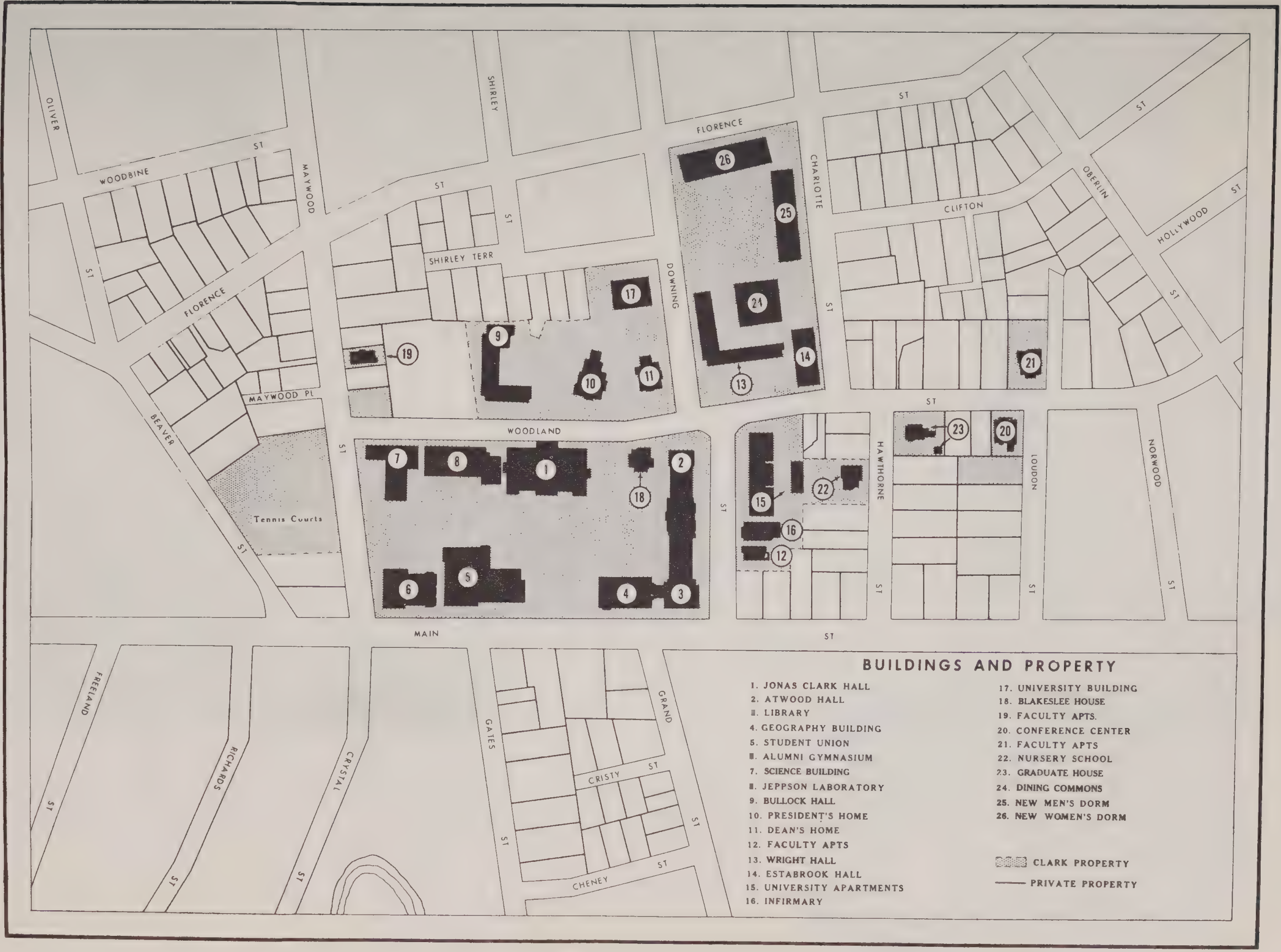
LIBRARY TOWER

ATWOOD HALL

GEOGRAPHY BUILDING

ESTABROOK HALL

WRIGHT HALL


BUILDINGS AND PROPERTY
1. JONAS CLARK HALL
2. ATWOOD HALL
3. LIBRARY
4. GEOGRAPHY BUILDING
5. STUDENT UNION
6. ALUMNI GYMNASIUM
7. SCIENCE BUILDING
8. JEPPSON LABORATORY
9. BULLOCK HALL
10. PRESIDENT'S HOME
11. DEAN'S HOME
12. FACULTY APTS
13. WRIGHT HALL
14. ESTABROOK HALL
15. UNIVERSITY APARTMENTS
16. INFIRMARY
17. UNIVERSITY BUILDING
18. BLAKESLEE HOUSE
19. FACULTY APTS.
20. CONFERENCE CENTER
21. FACULTY APTS
22. NURSERY SCHOOL
23. GRADUATE HOUSE
24. DINING COMMONS
25. NEW MEN'S DORM
26. NEW WOMEN'S DORM
▨ CLARK PROPERTY
—— PRIVATE PROPERTY
OLIVER
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MAYWOOD ST
SHIRLEY ST
SHIRLEY TERR
FLORENCE ST
FLORENCE
MAYWOOD PL
BEAVER ST
Tennis Courts
WOODLAND ST
DOWNING ST
CHARLOTTE ST
CLIFTON
OBERLIN ST
HOLLYWOOD ST
HAWTHORNE ST
LOUDON ST
NORWOOD ST
MAIN ST
FREELAND ST
RICHARDS ST
CRYSTAL ST
GATES ST
GRAND ST
CRISTY ST
CHENEY ST

BULLOCK HALL

NEW RESIDENTIAL FACILITIES

ALUMNI GYMNASIUM

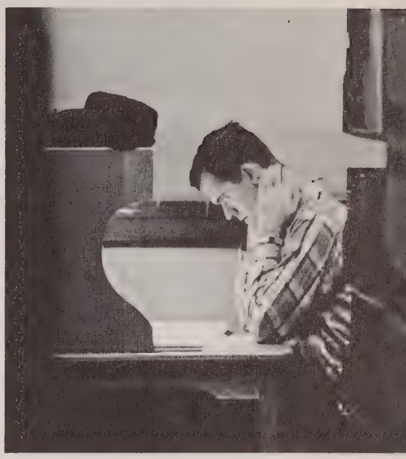
JEFFERSON HALL

UNIVERSITY APARTMENTS

CONFERENCE CENTER

GRADUATE HOUSE

and lounges, study and recreation facilities. Bullock Hall, a women's dormitory also completed in 1959, is similar in design to Wright Hall. It houses 137 women students and has lounges and recreation rooms. In the fall of 1964 the University plans to open a new three-building complex for residential students. The first major addition to the campus under Clark's ten-year development program, the facilities will provide a dormitory for women to house 150 students, a similar structure to house 146 men and a commons building containing dining facilities, lounges and meeting and recreation rooms. The Alumni Gymnasium, one of Clark's pre-war buildings, possesses a gymnasium seating 800 persons and shower and locker facilities for intramural and intercollegiate athletics. The offices of the Department of Physical Education are also there. On the second floor is the Alumni Office and Alumni Lounge, a comfortable meeting room for University organizations. Another newly-constructed building is the Student Center—Jefferson Hall. Opened in 1959, Jefferson Hall contains the University Dining Hall and snack bar, faculty and student lounges, a recreation room, student mail boxes and the University Bookstore. The University Apartments on Downing Street, which have at various times served as housing for women undergraduates, now provide apartments for married faculty, staff and graduate students. Near the main campus is the Conference Center, originally the site of the Institute of Liberal Studies for Executives but now used for university meetings and functions. The University purchased a large private home in 1961 and has converted it into a Graduate House, a dormitory for graduate students. This contains living quarters for graduate students as well as a comfortable lounge and kitchen facilities. A number of other private homes near the campus have been purchased in recent years to provide housing for married graduate students and faculty members.



The Library

Tilton M. Barron, *Librarian*
Marion Henderson, *Reference Librarian*
Elizabeth Hassinger, *Catalog Librarian*
Valerie Lein, *Circulation Librarian*

The Clark University Library contains over 250,000 volumes and some 50,000 maps and charts. The major part of the collection is centrally housed, and an open shelf system fosters free access to books and periodicals for student and scholar. Chemistry periodicals are available for reference at the Kraus Library—Jeppson Laboratory.

The collection reflects the history and growth of the University. The combined scholar's library of the early graduate school and the undergraduate library of Clark College have been developed through the years to serve the academic needs of Clark University. The richest holdings are in the fields in which graduate work is offered—geography, psychology, biology, chemistry, physics, mathematics, economics, and history and international relations. More characteristically undergraduate in content are the collections dealing with music, fine arts, language, literature, religion, and philosophy. The Library pays particular attention to major bibliographical and reference tools, and currently receives over 1100 periodicals.

A music library of recordings contains a collection of classical and standard musical works. There is also a listening room in the building.

The Clark University Library coordinates its acquisition of new material, and exchanges material, with other libraries in the Worcester area.

Planning is currently underway for a new library to house half-a-million volumes and to accommodate 750 readers. The new library will be named the Robert Hutchings Goddard Library, in honor of Dr. Goddard, Father of the Space Age, distinguished alumnus, and professor of physics at Clark from 1914 to 1942.

The University Looks to the Future

At a time when higher education is confronted with unprecedented challenges in meeting the nation's needs, Clark University faces the future with comprehensive, thoughtful plans and an ambitious program for their achievement. In establishing ten-year objectives for the University, trustees, faculty, alumni and friends have been aware both of Clark's unusual history and traditions, and the critical national need for expanded educational services and facilities. Reflecting these considerations, Clark's goal is to hold steadfast to its traditions as a university concerned with scholarship of the highest possible order, and offering graduate work to and beyond the doctorate in selected fields of study. Too, the University aims to preserve—and enhance—the unusually close relationship which exists between undergraduate and graduate education at Clark, thus maintaining one of its most unique features: an intellectual atmosphere which combines the spirit of creative discovery found in the large university with the intimate, personal relationships which are found in the small liberal arts college. Finally, while continuing to foster the values of smallness in every possible way, the University will undertake planned and limited expansion to an enrollment of not more than 1500 students by 1972, the year in which it will celebrate the 85th anniversary of the granting of its charter.

For the achievement of these goals, the trustees have established *The Clark Program,* a comprehensive ten-year development effort whose objective is to secure nearly $21 million in new resources by 1972. Of the total sought, twelve million will be required to support endowed professorships, faculty salaries, scholarships, fellowships and special programs to enrich the educational experience at Clark. The remaining $8,800,000 will be utilized to realize the first phase of Clark's *Campus of Tomorrow,* a long-range plan for total campus development.

Since the formal announcement of *The Clark Program* in May, 1962, rapid progress has been made toward its goals. Within the first two years, commitments for more than $5,000,000 were secured, construction was underway on a $2,500,000 residential complex, a new central heating plant was installed, and substantial alterations were completed in Jefferson Hall. In addition, preliminary planning for the $2,850,000 Robert Hutchings Goddard Library was undertaken.

The Clark Program is the largest undertaking of its kind in the University's history—a program rooted in conviction about the importance of what higher education means at Clark, and pursued with confidence that success will be achieved.

THE UNDERGRADUATE COLLEGES

CLARK COLLEGE Clark College, the undergraduate men's division, and the Women's College constitute the primary undergraduate divisions of the University. Educationally they operate as a unit, and admission and degree requirements are identical in the two colleges. Both offer academic programs in the liberal arts and in business administration.

LIBERAL ARTS The liberal arts program provides for breadth of knowledge and understanding together with the intellectual discipline resulting from concentration in a selected field of special interest. The program, leading to the degree of Bachelor of Arts, possesses a large degree of flexibility permitting adaptation to a wide variety of individual interests.

BUSINESS ADMINISTRATION Fundamental skills as well as broad professional training are offered through the business administration program. Breadth is assured by prescribing required courses in basic subjects and selected functional areas of business activity. Professional specialization is assured by requiring the student to select an area of concentration. Cultural background is available to the student by allowing him to freely elect part of his program from courses in the arts and sciences. The areas of concentration are accounting, economics, finance, marketing, management, and personnel administration. The program leads to the degree of Bachelor of Science in Business Administration.

Admission

GRADUATE STUDENTS

Candidates for the degree of Master of Arts, Master of Arts in Education, Doctor of Philosophy, or Doctor of Education should read the section entitled "Graduate School." All inquiries pertaining to these programs should be addressed to the Dean of the Graduate School or to the chairman of the department involved.

FRESHMAN ADMISSION

Clark University welcomes applications for admission from young men and women whose backgrounds show them to be prepared to join whole-heartedly in the life of an intellectual community.

Selection is on a competitive basis with particular emphasis upon scholastic achievement. Applicants are subject to final approval by the Admissions Committee, comprised of members of the faculty and the admissions officers.

APPLICATION

Candidates seeking admission are encouraged to submit their applications as early as possible during the first semester of their final year of secondary education. An application fee of $10, nonrefundable, must accompany each application in order to receive due consideration.

ENTRANCE REQUIREMENTS

General: The completion of a four-year high school program or its equivalent, including a minimum of 16 acceptable units of credit, is required for admission to the freshman class. (The term "unit" means a course of study in one subject taken through a school year.) An exception may be made if the applicant ranks within the upper fifth of the class with which he or she graduates. Official records from all secondary schools attended must be submitted.

Subject-Matter Requirements: For admission to the freshman class the subject-matter requirements are as follows:

Required Subjects, 8 units	
English	4 units
Mathematics (algebra and geometry) (Applicants planning to specialize in science or mathematics are advised to present three or more units of mathematics.)	2 units

Foreign Language (in a single language)	2 units

Restricted Electives, 5 or more units

Social Studies (history, government, civics, etc.)	1 to 4 units
Natural Sciences (biology, chemistry, physics, etc.)	1 to 4 units
Mathematics	1 to 2 units
Foreign Language (A single unit in a beginning foreign language is not acceptable.)	1 to 4 units

Free Electives, not more than 4 units

Subjects recognized by the applicant's secondary school in its regular program, at the discretion of the Admissions Committee.

Entrance Examination Requirements: All applicants must arrange during their senior year to take and submit the results of the Scholastic Aptitude Test and the Writing Sample as administered by the College Entrance Examination Board prior to final consideration by the Admissions Committee. The December or January administration of these tests is preferred, but the March date is acceptable.

To assist the college in determining proper placement in language and mathematics courses, applicants are also required to take two Achievement Tests of the College Entrance Examination Board, one in either level of Mathematics and the other in a Foreign Language, written.

Further information concerning these testing programs may be obtained from individual school guidance counselors, or from the College Entrance Examination Board. In the East, write to Post Office Box 592, Princeton, New Jersey; in the Far West write to Post Office Box 9896, Los Feliz Station, Los Angeles 27, California.

Campus Interview: Interviews are available to all students who wish to investigate the prospect of attending Clark University, regardless of whether formal application has been made or not. However, all applicants within 350 miles of Worcester are required to attend an on-campus interview sometime during their final year of secondary education, and prior to action upon their application. Candidates for admission, but residing outside of this area, are also encouraged to attend an on-campus interview whenever it is possible.

The Admissions Office, located on the main floor of Jonas Clark Hall, is open Monday through Friday, 9:00 a.m. until 5:00 p.m., throughout the year, excluding national holidays, and on Saturday between 9:00 a.m. and 12:00 noon, commencing in late October until mid-April. Arrangements for personal interviews and campus tours may be made by writing or phoning the Admissions Office at least two weeks in advance of the desired date.

Students planning to visit our campus during the summer months may also arrange, in advance of their arrival, for personal interviews.

NOTIFICATION OF ADMISSION AND DEPOSIT

Notification of admission to the incoming freshman class is at the discretion of the Admissions Committee, but will normally begin on or about March 1st. No consideration will be given to an applicant until all previously stated requirements have been fulfilled.

Upon receipt of an offer of formal admission a student will be required to indicate acceptance of the offer by making an admission deposit of $50, non-refundable, to reserve a place within the incoming class. This applies to all students except graduate and special students. This deposit will be credited towards the charges for the first semester.

HOUSING ARRANGEMENTS

All freshmen not living at home are required to take up residence within University operated dormitory facilities. Rooms will be assigned during the summer prior to the arrival of the freshman class. Any inquiries concerning living arrangements should be sent to the Office of the Dean of Students (men) or the Dean of Women.

TRANSFER APPLICANTS

Clark University will consider a limited number of academically qualified applicants for transfer from both four-year colleges and universities, and two-year junior colleges.

TRANSFER REQUIREMENTS

All applicants for admission under the transfer program are required to submit evidence of honorable dismissal, complete transcripts of all previous academic records and such other information as the Admissions Committee may request. An individual, on-campus interview is also required. No application will be considered for admission until all requirements have been satisfied.

TRANSFER CREDIT

Credit will be given for those college level courses previously taken which are comparable to those offered within the Clark University curriculum, and which have been completed with a grade of C-minus or better. No credit will be given for any course completed with a grade of D.

Evaluation of credits for college courses completed elsewhere will be made at the time of a student's first registration at Clark and will be used in planning his course program and in classifying him provisionally as a freshman, sophomore, junior or senior. Transfer students in the business administration program should note that (1) Business English and Business Mathematics are not accepted for credit toward the degree; (2) the University reserves the right to examine a student in any course required for the degree which is offered for transfer credit; (3) a maximum of two year-courses in one area of concentration may be accepted for transfer credit without further confirmation, and more than two courses in one area will not be accepted for transfer credit until a confirming course at a higher level has been completed at Clark with a grade of C-minus or better; (4) in no case, will transfer credit be allowed for more than four courses in any one area; and (5) in any subject in which a full year-course is required at Clark, the University may deny the transfer of credit for a half-year course in that subject.

A graduate of the three-year course of the School of the Worcester Art Museum may be admitted as a candidate for the degree of Bachelor of Arts with the rank of junior in the college. In such cases the usual admission requirements must be met and the general subject-matter requirements for the degree must be satisfied.

SUMMER SCHOOL AND EVENING COLLEGE Persons who may wish to be candidates for a degree or who may wish to take advantage of the opportunities for study provided by the Summer School or The Evening College are invited to send all inquiries concerning admission, programs available, or any other questions to the Office of the Director of The Evening College and Summer School, Clark University.

FOREIGN STUDENTS Though Clark University is favorably disposed to receive applications for admission from foreign students, it is not prepared to provide financial aid to the extent of covering a greater portion of their educational expenses. Also, every foreign student accepted must have medical insurance, preferably that available from the Institute of International Education.

Applications from foreign students will not be considered if received after May 1. Foreign students whose native tongue is not English must be able to satisfy the University requirements for proficiency in the English language.

SPECIAL STUDENTS AND AUDITORS Persons, not prospective degree candidates, who wish to take advantage of the opportunities for study provided by the University and who give satisfactory evidence of adequate preparation for the work which they wish to undertake may apply for admission under the status of Special Student. All inquiries concerning this category of student should be addressed to the Dean of Students.

At the discretion of the administrative officers of the University, Auditors, registered for attendance but not for credit, may be admitted. They are required to pay the regular tuition rates but are not enrolled as students and do not pay the matriculation fee.

WITHDRAWAL The University reserves the right to require the withdrawal at any time of any student or auditor whose record in either scholarship or conduct fails to meet the expectations implied by his admission.

Student Financial Aid

GENERAL INFORMATION

Scholarships and loans are provided by the University from endowed and unendowed funds. Other scholarships and loans are available from varying sources in communities throughout the United States.

SCHOLARSHIPS

Scholarships are awarded on the basis of ability, financial need and character. They vary in amount and some are restricted to definite localities or to particular subjects.

To be eligible for a scholarship, an entering freshman should have an excellent scholastic record. Upperclassmen with satisfactory academic records may apply for scholarships at the beginning of any semester. Transfer students must be in residence at least one semester to be considered for scholarships.

Ordinarily an award for the first semester is continued through the second semester if the holder maintains a satisfactory scholastic record.

Incoming freshmen applying for scholarship aid do so through the College Scholarship Service, Box 176, Princeton, N. J. or, for the Far West, Box 27896, Los Angeles 27, Cal. The service provides the University with an independent analysis of the applicant's financial needs. The application (Parents' Confidential Statement) must be obtained at the student's secondary school or from Princeton, N. J. and should be submitted to the College Scholarship Service at the same time that the student is applying for admission. In order to receive scholarship consideration the Parents' Confidential Statement must be submitted prior to February 1st. No other scholarship application is necessary. The majority of students are notified about scholarship shortly after they receive the decision of their admission. Upperclassmen may apply for scholarships through the College Financial Aid Officer of the University.

LOANS

Students who find it necessary to borrow money to continue their education may do so through various sources.

The National Defense Act Student Loan Program provides funds for long-term loans which bear no interest until a student has completed full-time study. Normally a person borrowing from these funds will repay the amount over a ten-year period. Graduates who enter public school teaching at the elementary or secondary level are eligible to have up to 50 per cent of their loan excused if they remain in teaching for a five-year period. National Defense Student Loan applications are available upon request only after notification of admission.

Clark maintains its own loan funds which are of the short-term variety with interest bearing immediately upon receipt of the loan.

Commercial deferred or extended payment plans such as The Tuition Plan and Education Funds Inc. are also available and should be carefully considered by the applicant.

PART-TIME EMPLOYMENT

A limited amount of part-time employment is available in various offices and departments of the University.

Further details on all forms of Financial Aid at Clark University may be obtained by writing to the Financial Aid Officer in care of the Admissions Office.

SCHOLARSHIP FUNDS

The following scholarships are currently available from University funds:

The Charles T. Bumer Memorial Scholarships: Up to six full tuition scholarships, one of which includes tuition, room and board, are awarded annually to entering freshmen. These scholarships are granted to outstanding freshman applicants and are named in honor of the late Dr. Bumer, a professor of mathematics at Clark from 1948 to 1960 and chairman of that department.

The Ellis-Hubley Competitive Scholarships: These are competitive scholarships restricted to male residents of Worcester or neighboring towns who have graduated from secondary schools in those areas. The scholarship accords full tuition plus a stipend and is awarded annually without regard to financial need, to the beneficiary from the income of funds bequeathed in memory of Gordon A. Hubley, Clark '10, and of Theodore T. and Gary G. Ellis.

One appointment is made each year to a member of the freshman class and the award is normally continued throughout the four years of the college course. Up to five other full tuition scholarships are awarded annually to applicants who, in the judgment of the Scholarship Committee, stand next below the successful applicant. A candidate must receive the recommendation of the principal or headmaster of his secondary school.

The Jonas G. Clark Scholarships: These scholarships have been established by the trustees to provide financial aid for undergraduate students.

The Theodore T. and Mary G. Ellis Scholarships: These scholarships provide financial aid for male or female residents of Worcester and Worcester County.

The Whitman Scholarship: Named in honor of Ernest R. Whitman, long-time athletic director at Clark, this scholarship offers full tuition plus a yearly stipend and is awarded to students, usually men, whose qualities of leadership in classroom and campus merit such an award.

The Albert C. Erickson Scholarship: Established by the Tupper Foundation to honor an outstanding Clark student and teacher whose death in 1936 terminated a brilliant career in mathematical physics, this $1,000 tuition scholarship is awarded annually to an undergraduate, normally near the end of his junior year, who has done outstanding work in physics and mathematics and who shows unusual promise in these fields.

The Sanford Memorial Scholarship: Established by alumni in honor of Edmund C. Sanford, president of Clark College from 1909 to 1920, the fund provides an annual scholarship for a male senior undergraduate.

The Livermore and Ambulance Scholarship: The endowment for this scholarship was provided by citizens of Worcester in honor of Charles Randall Livermore, first Clark man to fall in battle in World War I, and of his companions in the Clark Unit of Ambulance Drivers. The scholarship is for male students who are residents of Worcester County.

The Henry A. Willis Scholarships: Male students from Fitchburg, Mass., and vicinity have first consideration in the award of these scholarships. In the absence of suitable candidates from this community, grants may be made to others.

The Helen Brewster Randolph Memorial Scholarship: Established by the late Professor Charles B. Randolph in memory of his mother, the fund provides scholarships restricted to male college students.

The Charles B. Randolph Fund: The fund is restricted to male students, preferably those whose major is a foreign language.

The Alice Friend Newton Memorial Scholarship: This scholarship provides full tuition for an upperclass student in the Women's College whose major is psychology.

The William Richardson Scholarship: This scholarship was established by a bequest of Carlton E. Richardson, Clark '08, as a memorial to his father. The income of this fund is available preferably for male students of the Protestant faith.

The Jennie L. Richardson Scholarship: This scholarship was established by a bequest of Carlton E. Richardson, Clark '08, as a memorial to his mother. The income of this fund is available for female students of the Protestant faith.

The B'nai B'rith Scholarship: The Worcester Chapter, Order of B'nai B'rith, provides a scholarship primarily but not exclusively for the aid of Jewish students.

The Clark University Faculty Women's Club Scholarships: These scholarships are available to undergraduate students, either men or women, who rank high in intellectual and personal qualities.

The Aaron Fuchs Memorial Scholarship Fund: Given by Mrs. Celia Fuchs in memory of her husband and in honor of her sons, Lawrence, Clark '44, and Jerome, Clark '53, provides scholarship aid for non-residents of Worcester or Worcester County.

The Reginald Bryant Allen Fund: The income from this fund is to be awarded annually to a deserving student majoring in mathematics.

The Alumni Group Scholarship: One full tuition scholarship to an accredited freshman is awarded from a fund established by the trustees and the first three classes to graduate from Clark College, '05, '06 and '07.

The Charles W. and Annie L. Bruninghaus Fund: The income from this fund, established in 1957, provides scholarship aid to undergraduates.

The Levi Knowlton Fund: A bequest of Mary H. Nixon in honor of her father, Levi Knowlton, to provide scholarship aid to undergraduates.

The Abraham Persky Scholarship Fund: The income of this fund is used to assist deserving undergraduates.

Pleiades Scholarship: This scholarship is awarded annually to a member of the Women's College on the basis of active citizenship, scholarship and financial need from funds raised by Pleiades, senior women's honorary society.

The Probus Club Scholarship: This scholarship is supported by the Probus Club of Worcester.

The National Council of Jewish Women Scholarship: The Worcester section, National Council of Jewish Women, awards a scholarship each year to a Jewish student of the Women's College who resides in Worcester County.

The High School Basketball Tournament Scholarship: Receipts of the High School Basketball Tournament held annually at Clark provide assistance to male undergraduates.

The Art Museum Scholarship: This scholarship is available to Worcester Art Museum students to pursue studies at Clark.

LOAN FUNDS

The following loan funds are currently available to undergraduates:

The Alumni Loan Fund: Established by the trustees and alumni for undergraduate assistance.

The May S. Rogers Loan Fund: The fund is available to undergraduates who need loan assistance.

The Haskell Talamo Loan Fund: The fund has been established by relatives and friends of the late Dr. Haskell Talamo, Clark '16.

The Louis N. Wilson Fund: The fund was established by the first librarian of Clark, as a loan source for male students in the college.

National Defense Student Loans: These loans are available to undergraduate students, especially those with superior records who desire to teach in elementary or secondary schools or who have special aptitude in science, mathematics or a modern foreign language.

The Academic Programs

GROUPS

Course credit may be obtained at the undergraduate level in the following fields of instruction which, for administrative purposes, are known as "groups."

Group A. Science and Mathematics: Biology, chemistry, experimental psychology, geology, mathematics and physics.

Group B. Social Sciences: Economics, education, geography, government, history, international relations, philosophy, psychology and sociology.

Group C. Language and Literature: Greek, Latin, English, French, German, Spanish, Russian, and comparative literature.

Group D. Fine Arts: Art and music.

MAJORS

A student may major in biology, business administration, chemistry, classics, economics, English, geography, geology, German, government, history, mathematics, music, philosophy, physics, psychology, sociology or Romance languages. A major in fine arts is offered through a program given in cooperation by Clark and the School of the Worcester Art Museum. Courses in education are offered, but a major is not available.

GENERAL EDUCATION

Many courses at Clark offer the student an opportunity to obtain a core of information and of ideas which will be possessed in common with many of his contemporaries and to stimulate intelligent and critical interest in fields of learning where he has no expectation of attaining professional competence. In choosing his program, the undergraduate is urged to supplement his major with courses of this character.

STUDENT PROGRAMS

The undergraduate normally carries a program of five courses throughout the academic year. In addition, he must meet the requirement for physical education. In general, a course meets three times weekly. Laboratory periods are usually three hours long. Students should consult their faculty adviser or major department when questions of course or program selection arise.

INDUCTION

Freshmen must attend an induction program held several days before the academic year begins. After meeting initially at the University, freshmen usually spend the remainder of the induction program at a camp or hotel.

During the induction program, freshmen have an opportunity to become acquainted with their classmates as well as members of the University faculty and staff. They also meet upperclassmen and alumni. Placement examinations and other tests are given. Freshmen attend individual and group conferences and register for a program of studies.

A modified induction program is held for transfer students entering the upper classes. These students do not attend the induction programs held off-campus but they do report early to the University for testing, orientation and registration.

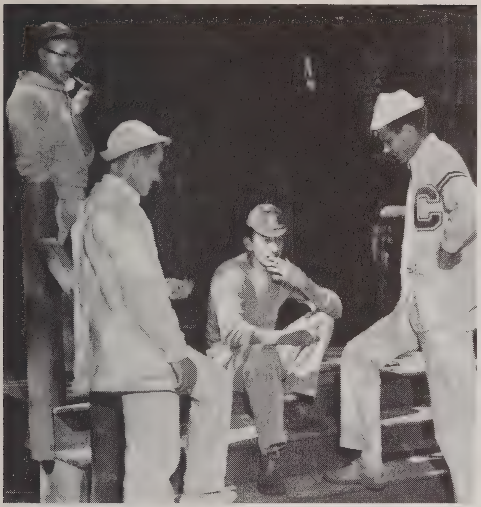
FACULTY ADVISERS

A freshman is assigned a faculty member who advises the student on a program of courses and on other matters. After the freshman year, students are encouraged to select an adviser of their own choosing. A change of advisers may be made on formal request addressed to the appropriate dean.

The adviser assists the student in choosing his program of studies and is usually available for consultation on any matter which the student may wish to discuss with him.

REGISTRATION

Each student is required to register for a detailed program of courses before every semester. The student will be given notice in advance of the dates on which registration is required. Failure to register within the announced period is penalized by a late registration fee.



Changes in registration may be made, with the approval of the student's adviser, for a limited time after the end of the registration period. Later changes involve a formal petition to the College Board.

FRESHMAN READING PROGRAM

During the first several weeks of the academic year, freshmen will meet with faculty members in small groups to discuss significant books which they have been asked to read in the previous summer.

FRESHMAN ACADEMIC PROGRAM

A freshman must choose his entire program from courses which are open to freshmen. All freshmen are required to take an English course (normally English 11), a Group A course, a Group B course and an elective. Candidates for the A.B. degree must also take a course in a foreign language. Candidates for the B.S. in B.A. degree must take Business Administration 100, *Introduction to Managerial Accounting.*

Students especially qualified by preparation, performance and interest may elect a second laboratory science in place of a Group B course.

ADVANCED PLACEMENT

Placement in advanced courses is determined by individual performance on special departmental placement examinations or, in some instances, on the Advanced Placement and Achievement Tests of the College Entrance Examination Board. College credit for certain courses completed in high school may also be granted toward the bachelor's degrees on the basis of the College Entrance Examination Board Advanced Placement Tests.

SOPHOMORE PROGRAMS

A sophomore must give priority in his program to any general degree requirements which remain to be satisfied and should provide for an introduction to the field or subject in which a major is chosen. The remaining elective choices provide the student opportunity to broaden the range of his interests.

Tentative selection of a major is required of A.B. degree candidates at the time of registration for the sophomore year. Candidates for the B.S. in B.A. degree must select an area of concentration at the same time.

Sophomores may elect any course designated by a number beginning with the numeral 1, indicating the course is primarily for undergraduates. They are not admitted to courses designated by a number beginning with the numeral 2, except by permission of the College Board.

JUNIOR-SENIOR PROGRAMS

Juniors and seniors should plan their courses carefully and in consultation with their faculty advisers. However, these students may elect any courses designated by numbers beginning with 1 or 2, indicating courses which are primarily for undergraduates or for advanced undergraduates and graduate students. The selection by juniors and seniors of these courses is subject to any conditions stated in the course description.

Under special conditions and with the approval of the College Board and the Dean of the Graduate School in each case, seniors who rank in the upper third of their class may be admitted to courses designated by numbers beginning with the numeral 3, indicating courses which are primarily for graduate students.

ACCELERATED PROGRAMS

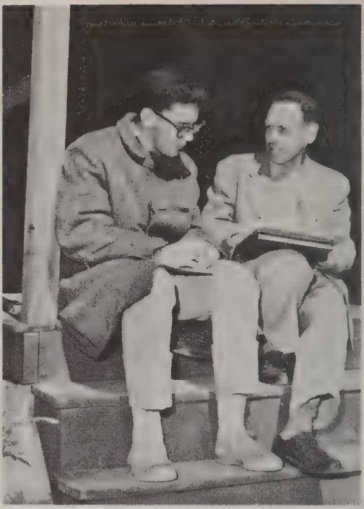
At least three years of college study, of which the last must be undertaken at Clark, is required for a bachelor's degree. A student may earn the degree in this minimum time, or in three and

one-half years, provided he is prepared to make the additional effort which is required and is able to maintain the required level of scholarship.

Such accelerated programs are possible through a combination of six-course programs during the regular academic year and attendance at summer schools. Credit toward a degree for study at a summer school is granted only when it is officially recognized in advance in each individual case.

To complete the bachelor's degree requirements in three years, the student must carry a six-course program through all three years and attend two six-week summer schools. Only students of exceptional ability and in excellent physical health are advised to undertake such a program.

To complete the bachelor's degree requirements in three and one-half years, the student must accumulate in that time credit for two and one-half courses in addition to a regular program. The student can accomplish this without attending summer school if he carries a six-course program through two and one-half years. More commonly, the student will accomplish this by attending two summer schools and carrying a six-course program for one semester or by attending three summer schools.



SIX-COURSE PROGRAMS

A student whose average grade for any semester is C+ or better can register for a program of six courses for the following semester.

A senior whose graduation within the academic year depends on the completion of a six-course program during that year may register for a six-course program if his average grade for the preceding semester is C– or better.

The tuition charges for a six-course program are based on a "per course" rate. See the section listing tuition and other charges.

WASHINGTON SEMESTER PROGRAM

Clark participates in the Washington Semester program of the American University in Washington, D. C. Under the program, a small number of superior students may be nominated to attend the program, usually in the junior year, studying United States government in the nation's capital. Though any student may be interested in the program, the opportunity should be particularly attractive to students majoring in government, international relations, history, economics or sociology. Full credit is given for the program toward the degree at Clark. Inquiry and application should be made to the chairman of the Department of History, Government and International Relations.

JUNIOR YEAR ABROAD

In cooperation with such organizations as The Experiment In International Living, The Institute of European Studies and several American colleges and universities, Clark offers its students the opportunity of spending their junior year abroad. These and other programs of foreign study involving academic credit must have prior approval of the College Board.

PARTIAL PROGRAMS

Under special circumstances, programs of fewer than five courses may be permitted. A student whose program is fewer than four courses is designated as a part-time student. Part-time students are excused from the requirement in physical education. Tuition charges for the program of a part-time student are based on a "per course" rate. See the section listing tuition and other charges.

SPECIAL STUDENTS

Special students register for such programs as they agree upon in consultation with the instructors concerned. They are excused from the requirement in physical education. Tuition charges are based on a "per course" rate. See the section listing tuition and other charges.

PRE-PROFESSIONAL PROGRAMS

One function of the undergraduate colleges is to prepare students who intend to enter a professional school or take graduate study. Students entering Clark may gain this basic preparation through the selection of the appropriate major. A student planning a professional career should consult with his adviser as early as possible in his college career to best shape an undergraduate program.

Pre-medical, pre-dental or pre-nursing students can satisfy pre-professional requirements for entrance into a medical, dental or nursing school by taking necessary basic courses in biology, chemistry or physics. In the case of teaching, Clark offers courses necessary for state certification. It also offers a graduate program in education. For information concerning teaching requirements, consult the Education Department section under the listing of "Departments and Courses."

Pre-law students are not limited to the selection of a particular major or a fixed group of studies; some attention to the social sciences is generally favored. Undergraduates headed for law schools are advised to seek a broad liberal arts education.

Requirements for a Bachelor's Degree

GENERAL REQUIREMENTS

A student in good standing who completes the requirements for either the degree of Bachelor of Arts or the degree of Bachelor of Science in Business Administration will be recommended for the appropriate degree unless, in the judgment of the College Board, there is cause for withholding the recommendation.

Residence: A student must complete at least three years of college study, of which the last must be spent at the University, with a minimum of four courses each semester.

Course Requirements: All college regulations concerned with credit toward a degree are expressed in terms of courses.* A course as a unit of credit normally implies three or four class meetings or laboratory exercises per week throughout two semesters and constitutes one-fifth of a student's normal program. If fractional courses are offered, these will be combined in computing total course credits.

Undergraduates admitted to courses primarily designed for graduate students and designated by numbers beginning with the numeral 3 receive one-half course credit per semester irrespective of the number of weekly class meetings. Twenty full courses at a satisfactory level of scholarship are required for graduation.

Physical Education: A student must complete two years of physical education, two hours per week. A fee of $50 will be charged to any student who has an *unexcused* failure in any semester in the two-year men's physical education requirement. A proportionate fee will be charged to women students who have an *unexcused* failure in any portion of the women's physical education requirements.

SPECIAL REQUIREMENTS

In addition to the general requirements for a bachelor's degree, there are specific requirements for the degree of Bachelor of Arts and for the degree of Bachelor of Science in Business Administration.

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*Effective with the academic year 1965-1966, all credits will be expressed in terms of semester hours.

SPECIAL REQUIREMENTS BACHELOR OF ARTS

Major: A departmental major consists of seven courses designated by the department for this purpose. Four or five of these must be courses in the major subject; the remaining courses must be in fields of study closely related to the major subject. A grade of higher than C– is required in at least 11 semester grades involved in the completion of an acceptable major.

Mathematics 11 or 12 is a freshman year requirement for all students intending to major in Group A—Science and Mathematics.

Group A—Science and Mathematics: The student must take and pass two courses, one in each of two different fields. The two courses may not be distributed between more than two fields of study. One of them must be a laboratory science. Courses in the history of the sciences are not counted toward the fulfillment of this requirement.

Group B—Social Science: The student must take and pass two courses, one in each of two different fields. The two courses may not be distributed between more than two fields of study.

Foreign Language: The student must take and pass a course in a foreign language at or beyond the third-year college level. However, freshmen whose placement tests show them ready for such a third-year course may fulfill this requirement by the successful completion of two years of a second foreign language. Language study must begin in the freshman year. A student whose previous education has been in a language other than English may be relieved of the foreign language requirement upon the successful completion of the freshman English course.

English: The student must take and pass one half-course beyond English 11. All students are required to maintain satisfactory proficiency in English.

Fine Arts: A half-course in fine arts or music must be successfully completed.

SPECIAL REQUIREMENTS BACHELOR OF SCIENCE IN BUSINESS ADMINISTRATION

Mathematics: One course in mathematics is required.

Laboratory Science: One course in a laboratory science is required.

English: Two courses are required in English of which a half-course may be Public Speaking.

Sociology, Psychology or Government: Three courses are required in not more than two fields.

Economics: One and one-half course in economics is required.

Business Courses: Requirements include one and one-half courses in accounting, one half-course in marketing, one half-course in management, one course in statistics, one half-course in Corporation Finance, and one course in Analysis of Business Problems.

Concentration: In the fields of accounting, economics and finance, management or marketing, in addition to the courses already required, the student's program shall include no less than two nor more than three courses in any one field, except that the total courses in any one field shall not be less than three. For this purpose, no more than two half-courses with a grade of less than C– are acceptable.

Elective Courses: One and one-half of the remaining courses must be in the liberal arts (non-business) area.

Academic Regulations

GRADES

Grades are reported for each student at the end of each semester. The grades are A—excellent; B—good; C—average; D—poor; and F—failure. The modifying symbols, plus and minus, are used with each of these letter grades, except F, giving 12 levels of passing grades. A report of incomplete is permitted only when sickness or some other unavoidable circumstance prevents the completion of a course.

A record of failure in a course is final and not subject to change on the basis of any subsequent performance of the student who is involved. Credit for a course in which a failure has been reported may be secured only by repeating the course and earning a passing grade. A record of incomplete incurred in the first semester must be made up by the end of the academic year; if incurred in the second semester or summer term, it must be made up by midsemester of the following fall. If a course is not completed within the specified time, the record of incomplete is changed to one of failure.

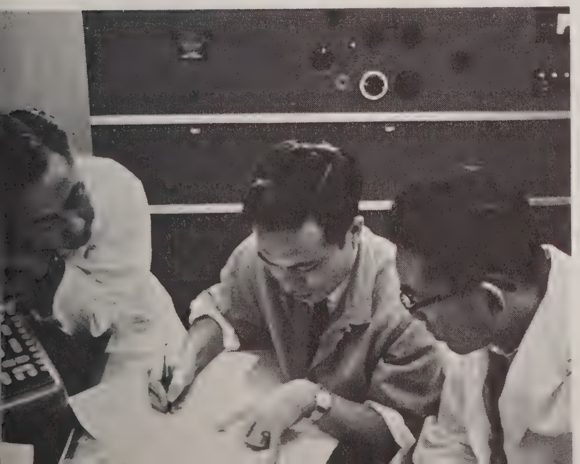
SCHOLARSHIP STANDARDS Courses with the grades of D+, D, or D– may not be counted toward a bachelor's degree beyond one-quarter of the total credit required, i.e., not more than five such courses or their equivalent in fractional courses may be counted. In applying this regulation, only grades received and credit earned at Clark are considered.

CLASSIFICATION OF STUDENTS A student continues to be listed in the class with which he entered college until the end of the third, or junior, year. At this time only those students who have credit for at least 14 courses with a minimum of 18 semester grades of C– or better are promoted to the senior class.

PROBATION Students with unsatisfactory grades are placed on probation. They will usually be required to withdraw from the College if they have two consecutive or three non-consecutive probationary records.

EXAMINATIONS Final examinations are regularly given at the end of each semester in all college courses. Approximately two weeks are set aside for each examination period and an attempt is made to distribute the examinations for any individual student throughout this period. Absence from a final examination, except for the most compelling reasons, usually results in a record of failure in the course. Other examinations and tests may be given at any time during the semester at the convenience of the instructors.

ATTENDANCE Students are expected to be present on the first day of each term and to continue in attendance from day to day until the end of the term. Students are expected to be consistently regular in attendance.



Honors, Awards and Prizes

ANNUAL HONORS

First honors or second honors are awarded at the end of each year to members of the freshman, sophomore and junior classes who have, in the judgment of the College Board, distinguished themselves by their scholarship during the year.

COURSE HONORS

The bachelor's degree may be awarded *cum laude, magna cum laude* and *summa cum laude* to members of each graduating class whose records, in the judgment of the College Board, warrant this distinction.

DEPARTMENTAL HONORS

A student may elect a program leading to a bachelor's degree with honors in a particular subject at the beginning of the junior year and, in some cases, at the beginning of the senior year. The opportunity is open to both A.B. degree and B.S. in B.A. degree candidates. Under this plan, the department appoints an honors adviser who assists the student in working out a unified program of courses for the junior and/or senior years. The program may include a maximum of two honors courses in which the student works with a large measure of independence under the supervision of the adviser. In the senior year, the student must satisfactorily pass a comprehensive examination given by the department.

Students may apply in writing to their major department for permission to take honors work, not later than May 1 in the sophomore year or, in some departments, in the junior year. Department approval is necessary for admission to such work. In exceptional cases and in certain departments, application may be made and admission approved by the department concerned as late as the first two weeks of the senior year but only with consent of the College Board.

Admission to an honors program does not relieve the student from any of the standing regulations. A student's candidacy for honors will be terminated at the end of any semester in which he has not maintained a standard satisfactory to the department in which he is doing honors work. If candidacy is terminated for any reason, the amount of credit to be allowed for honors courses will be determined by the College Board in consultation with the major department.

The department may recommend the student's graduation with honors, high honors or highest honors, the recommendation to occur at the conclusion of the honors program. Only students meeting the standards of the College Board for the degree *cum laude* may receive departmental recommendation for high or highest honors.

PHI BETA KAPPA

The Society of Phi Beta Kappa, founded at the College of William and Mary in 1776, is dedicated to the recognition and encouragement of outstanding scholarly achievement in liberal studies. The Clark chapter, Lambda of Massachusetts, was established in 1953. Each year, a limited number of juniors and seniors are elected to membership on the basis of distinction in scholarship in programs which have been definitely liberal in character.

OTHER HONORARY SOCIETIES

Delta Phi Alpha: National Honor Society in German.
Gamma Theta Upsilon: National Honor Society in Geography.
Phi Sigma Tau: National Honor Society in Philosophy.
Psi Chi: National Honor Society in Psychology.
Sigma Pi Sigma: National Honor Society in Physics.

PRIZES AND AWARDS

Homer Payson Little Award in Geology: Provided by a group of interested alumni, the award is presented each Spring to that student who has achieved the highest record in geology classes during the year. The award is named in honor of Dr. Little, a professor of geology at Clark from 1922 until 1954 and also Dean of Clark College.

Prentiss Cheney Hoyt Poetry Prize: A prize of $20 is awarded annually by the English Department for the best poem by an undergraduate. The prize money is received from a fund established by alumni as a memorial to Dr. Hoyt, a professor of English at Clark from 1909 to 1920.

Loring Holmes Dodd Drama Contest: A prize of $35 is awarded by the English Department to the student writing the best one-act play. Dr. Dodd was professor of English at Clark from 1910 to 1949 and was chairman of that department.

Physics Achievement Award: Each year, the student in Physics 11 who, in the opinion of the instructor, shows the best performance and improvement in the course work is given a copy of the *Handbook of Chemistry and Physics,* made available by the Chemical Rubber Publishing Company.

Chemistry Achievement Award: A copy of the *Handbook of Chemistry and Physics* is awarded each year to the student who ranks at the top of the class in Chemistry 11.

American Institute of Chemists Award: A medal is awarded by the Chemistry Department each year to a senior chemistry major who demonstrates a high potential for the advancement of chemistry.

Ahepa Greek Prize: A prize of $25 is awarded each year to the best student in Elementary Greek. The prize is made available by the Worcester chapter, Order of Ahepa.

Tuition and Other Charges

GENERAL INFORMATION

Tuition, fees and other charges are listed below. Certain special fees may be required of students in certain departments. Charges for the Evening College and the Summer School can be found in their respective catalogs.

Tuition, board, dormitory rent and certain fees are due and payable prior to the opening of each semester. No one is permitted to register for any semester until financial obligations have been satisfactorily arranged. Veterans relying on government aid should have enough resources to meet the initial payments because the first government checks are often delayed. A penalty fee is levied for late registration or for late payment of charges.

TUITION Tuition is based on a normal program of five courses. Students who enroll for more or less than the normal program pay on a "per course" basis, one-fifth the full tuition.

Refund: If a student withdraws during the first week of any semester, he is allowed a refund of 80 per cent on tuition; second week–60 per cent; third week–40 per cent; fourth week–20 per cent; and after the fourth week–no refund.

BOARD All undergraduates not living at home are required to eat at the Dining Hall.

CONTINGENCY DEPOSIT All undergraduates are required to pay a deposit to cover minor charges which may be incurred during the academic year. They will be billed each year for whatever charges are incurred and the balance is returnable upon completion of their studies.

DORMITORY DEPOSIT The dormitory deposit is required of upperclassmen to reserve a place in the dormitory. It will be credited toward the dormitory charges. The deposit is forfeited if the student does not enroll for the specified semester.

DORMITORY RESIDENCE Undergraduates not living at home or in a fraternity house must live in the university dormitories.

STUDENT ACTIVITY FEE This fee is required of all undergraduates, including part-time but not special students.

INSURANCE All students are expected to subscribe to the student insurance plan which gives year-round coverage for health and accidents, unless they are similarly protected by other insurance.

APPLICATION FEE This fee must accompany the application for admission to the undergraduate colleges. It is not returnable.

ADMISSION DEPOSIT A fee is required of undergraduate students when they accept the formal offer of admission. It will be credited toward charges for the first semester. The deposit is forfeited if the student does not enroll for the specified semester.

KEY DEPOSITS Fees may be required of the student by certain departments for entrance to buildings, laboratories, personal lockers or mail boxes.

TUITION	Full program	$750.00	per semester
	Per course	$150.00	per semester
BOARD		$285.00	per semester
DORMITORY CHARGES	Room rent (single)	$225.00 to $250.00	per semester
	Room rent (double)	$175.00 to $200.00	per semester
ACTIVITY FEE		$ 13.00	per semester
LABORATORY FEES	Physics, Biology, Geology, Psychology, Languages, and Chemistry 11	$ 15.00	per semester
	All other Chemistry courses	$ 20.00	per semester
OTHER FEES	Application (undergraduate)	$ 10.00	
	Matriculation	$ 5.00	
	Induction (Freshmen)	$ 50.00	
	Induction (Transfers)	$ 10.00	
	Diploma (Seniors)	$ 5.00	
	Insurance	$ 25.00	
	Late registration	$ 5.00	
	Late payment	$ 5.00	
	Transcripts (no charge for first one)	$ 1.00	each
GRADUATE SCHOOL FEES	Diploma (master's degree)	$ 5.00	
	Publications (master's degree)	$ 10.00	
	Diploma (doctor's degree)	$ 25.00	
	Publications (doctor's degree)	$ 30.00	
DEPOSITS (UNDERGRADUATE ONLY)	Admissions	$ 50.00	
	Dormitory	$ 50.00	
	Contingency	$ 25.00	

Student Services

DINING HALL The University Dining Hall is operated for the convenience of the students and staff of the University. Service is cafeteria style. Undergraduates who do not live at home are required to eat at

the Dining Hall. Other members of the University are welcome on a semester basis or for single meals.

DORMITORIES

Men not living in their own homes are required to live in one of the men's dormitories or in a fraternity house. Women not living in their own homes are required to live in one of the women's dormitories. Rooms are reserved on receipt of the dormitory deposit fee which is later applied to room rental charges.

INFIRMARY

Facilities are provided at the University Infirmary for the treatment of emergencies and for minor medical services to all students while they are on campus. In addition, there is provision for the temporary hospitalization of resident students in cases of more serious illness. A nurse and University physicians are in attendance. The infirmary is open throughout the academic year.

HEALTH AND ACCIDENT INSURANCE

Subscription to a low-cost health and accident insurance plan covering ordinary medical expenses not covered by the University's health fee is required of all students unless they are similarly protected by other insurance.

PSYCHOLOGICAL CLINIC

A psychological clinic is available on campus to provide testing and counseling services to students who wish help in academic or personal adjustment. If desired, other more appropriate University or community resources can be recommended to the student. The staff includes clinic director, Dr. Robert W. Baker, other clinical psychologists in the Department of Psychology and consultants in psychiatry, psychiatric social work and clinical psychology.

GUIDANCE AND PLACEMENT BUREAU

Individual counseling on problems of vocational planning and adjustment to college life is also available through the Guidance and Placement Bureau. The service supplements the advisory services of individual teachers and deans. The bureau assists the student in job exploration, informing him of available positions and arranging interviews with potential employers. Students are urged to establish a permanent reference file. Part-time employment opportunities are also listed with the bureau for students who wish to work during their college career to help meet college expenses. The bureau is directed by Dr. James M. Coffee, associate professor of education.

CLARK U
CLARK U

Student Life

STUDENT LIFE

Student life at Clark is, as expected at a small institution, friendly and informal. Students are expected to conform to recognized standards of morality, good order and consideration for others. College activities are under a minimum degree of faculty supervision. Though all activities are not listed below, some deserve description.

STUDENT ACTIVITIES FEE

Non-athletic activities are partially supported by the student activities fee which, in addition, admits students to all athletic contests on campus, provides them with the college newspaper and yearbook and admits them to certain lectures, plays and concerts.

LECTURES AND CONCERTS

Throughout the year, outstanding scholars, musicians and artists are brought to the campus for lectures and concerts. The Clark Humanity Series and the Clark Student Series are the two major sources of such cultural activity.

MUSIC

Musical organizations open to all students include the University Chorale, Concert Choir, Madrigal Singers, and the University Orchestra.

DRAMATICS

The Clark University Players Society each year presents dramatic offerings with student casts. It has a distinguished record of productions which, in recent years, has included *Medea, Our Town, Hamlet,* and *The Waltz of the Toreadors.* An experimental theater group also performs in productions such as Ionescu's *The Bald Soprano.*

SPEECH AND DEBATE

The Debate Council frequently directs a High School Debate Clinic and enters numerous debate contests.

SOCIAL ACTION GROUPS

In recent years, these groups have brought to campus such persons as Norman Thomas, Malcolm X, Rev. Willard Uphaus and James Meredith, offering an opportunity for students to hear and question controversial views.

PUBLICATIONS

Students may join the staffs of *Scarlet,* weekly student newspaper; *Helicon,* student literary magazine; *Fotch,* student humor magazine; *Pasticcio,* student yearbook; and other journals of student opinion.

OTHER ORGANIZATIONS

Other campus organizations are affiliated with areas of department instruction, such as the Physics, Psychology and German clubs; hobbies or interests, such as the Chess Club, Pre-Law Club or Society for the Advancement of Management; and other activities, such as the Outing Club.

FRATERNITIES

Four fraternities are currently associated with the University. They are Lambda Chi Alpha, Tau Epsilon Phi, Kappa Phi and Phi Sigma Delta. All own fraternity houses nearby campus where members live.

GRYPHON AND PLEIADES

Each year, a group of men and women are chosen from the junior class on the basis of outstanding characteristics to join Gryphon—senior men's honorary society, or Pleiades—senior women's honorary society. The societies play an important role in campus life and in maintaining the traditions of the College. They supervise such annual events as *Rope Pull, Spree Day* and the *Christmas Tea.* In addition, they sponsor annual lectures.

SCARLET KEY

In addition to acting as guides for campus visitors, *Scarlet Key,* a sophomore-junior service organization, undertakes other activities beneficial to the University.

Physical Education and Athletics

PHYSICAL EDUCATION

Physical Education is required of all students for the general promotion of their health and mental efficiency. Two years of physical education, two hours per week, is a prerequisite for graduation. Students are excused from this requirement only on the recommendation of the medical director.

The physical education program for women requires, during each of the two years, attendance at classes in body mechanics and one of the rhythmic activities. Participation in one group sport and in one individual sport is also required. Folk dancing, square dancing and modern dancing are offered.

ATHLETICS

Students in the Men's College have the opportunity to participate in intercollegiate soccer, baseball, tennis, basketball, golf, hockey and crew. Competent coaches have immediate supervision over the teams.

Students in the Women's College can participate in field hockey, crew, horseback riding, archery, tennis, basketball, volley ball, badminton, fencing, softball and golf. Tournaments are held in the spring and fall and trophies are awarded to winners. Women use their own gymnasium for practice but have the use of the Alumni Gymnasium for games with outside organizations.

ELIGIBILITY

Participation in organized extracurricular competitive activities is denied only when a student's scholastic record indicates that continuance in an activity might be responsible for scholastic failure. Students carrying less than a full program of studies are ineligible unless the reduced program permits graduation at the end of the year in which the program is carried. A student transferring with advanced standing from another four-year college is ineligible for one calendar year from the date of registration at Clark to participate in any varsity sport in which he participated at the previous institution. Special students are not normally entitled to participate in competitive intercollegiate sports.

"The very best kind of education is obtained in doing things one's self under competent direction and with good guidance."
— CHARLES W. ELIOT
SCHOOL OF GEOGRAPHY ROOM

THE GRADUATE SCHOOL

The Graduate School

GENERAL INFORMATION

Clark University was initially established as one of America's first institutions dedicated exclusively to graduate study and research. Its faculty and graduates have endowed the University with an impressive record of accomplishments through the years. Under the administration of the Graduate Board, Clark offers programs leading to master's and doctor's degrees to qualified holders of a bachelor's degree or its equivalent of attainment.

Master of Arts degrees are offered in the fields of biology, biomedical engineering (in cooperation with Worcester Polytechnic Institute), chemistry, economics, education, geography, government, history, international relations, mathematics, physics, psychology and sociology. A Master of Business Administration degree is offered through the Evening College of the University.

Doctor of Philosophy degrees are offered in biology, chemistry, chemical-physics, economics, geography, history, international relations, and psychology. A Doctor of Education degree is offered by the Department of Education.

Departments which do not at present accept candidates for graduate degrees may offer courses which are suitable for inclusion in a program of graduate study.

Scholarships and fellowships afford financial aid to candidates for the graduate degrees and are listed at the end of this section. Additional information concerning departments and their offerings will be found in the section entitled "Departments and Courses."

INQUIRIES

General inquiries and correspondence concerning the Graduate School should be directed to the Dean of the Graduate School. Inquiries concerning specific programs of graduate work and applications for admission should be addressed to the chairman of the department concerned.

ADMISSION TO THE GRADUATE SCHOOL

Admission to the Graduate School may be granted only by the Graduate Board on the recommendation of a department of the University. Admission to the school does not imply admission to candidacy for a degree.

Application: A prospective applicant should communicate with the department in which he expects to do his major work. If he is encouraged by the department to make application, he will be provided with application blanks. These should be returned to the chairman of the department with an official transcript of undergraduate work and letters of recommendation from at least two persons who are competent to judge the applicant's qualifications.

In addition, applicants for admission to the Graduate School are strongly urged, and may be required, to submit a record of attainment in the Graduate Record Examination given by the Educational Testing Service, Princeton, N. J.

Application for both admission and for financial aid should be completed not later than March 1 if the applicant intends to begin his studies in the following September. Applications may be submitted, however, throughout the year and periodically are considered by the Graduate Board.

Admission: Admission to the Graduate School is granted for entry only at a specified time and lapses if the student fails to enter at that time. Admission as special or part-time graduate students may be granted to qualified applicants who do not wish to work for a degree or who cannot devote full time to study.

MASTER OF ARTS

Residence: An academic year of full-time study in residence, or its strict equivalent in summer sessions and part-time study, is a minimum requirement for a master's degree. Residence study is broadly defined as graduate work done at Clark University under the immediate personal supervision of at least one member of the university faculty.

Foreign Language: A reading knowledge of a foreign language, usually French or German, may be required of candidates for the degree of master of arts at the discretion of the major department.

Candidacy: Application for admission to candidacy for a master's degree should be filed with the Dean of the Graduate School not later than the first week of the last full semester which the student expects to spend in residence as a candidate for this degree.

ULTRACENTRIFUG

Applications will be considered by the Graduate Board when the student has completed one semester of full-time graduate work or its equivalent in residence at the University, obtained the written endorsement of his major department and paid the diploma fee and publication fee.

Candidacy for the degree of Master of Arts is valid through the fourth commencement after admission to candidacy. For satisfactory reasons, candidacy may be extended once for an additional period of three years by vote of the Graduate Board. If the candidacy expires without the degree having been awarded, the diploma and publication fees, less any expenses incurred, are returned.

Course Requirements: Each student must meet a minimum course requirement of five courses, or their equivalent in half-courses (1965-66: 30 semester hours). The program must be approved by the major department. One of the courses (1965-66: 6-8 semester hours) may be a research course devoted to the preparation of the thesis.

Thesis: The thesis will be written on a topic in the field of the student's special interest under the supervision of a member of his major department. A copy of the thesis, a précis of it approved by the supervising instructor, and an academic history page must be deposited in the Registrar's office not later than three weeks before the date of the commencement at which the degree is to be conferred. A second copy of the thesis with a copy of the précis must be delivered to the major department. The précis may not exceed 75 words in length. The title page, précis and academic history forms are obtainable from the Registrar. The ribbon copy of the thesis must be typed on prescribed paper, marginally ruled in black and obtainable at the University Bookstore.

The thesis is deposited by the Registrar in the University Library. The précis is printed by the University in an annual publication, *Dissertations and Theses.*

Each candidate must make a satisfactory record in such written examinations as may be required by the major department and in a final oral examination by a committee of three or more, two of whom must be members of the Graduate Board.

MASTER OF ARTS IN EDUCATION

The residency, candidacy, course and examination requirements are basically the same as those listed for the degree of Master of Arts.

Thesis: Students may choose one of three options, subject to the approval of the Department of Education. They may choose to (1) prepare a thesis or special report, as required for the M.A. degree; or (2) elect two additional semester courses (1965-66: 6 semester hours) in subject-matter fields; or (3) elect a double seminar in which papers are prepared and presented to fellow students and staff.

Further information concerning the degree of Master of Arts in Education may be found in the section, "Departments and Courses," listed under the Department of Education.

MASTER OF BUSINESS ADMINISTRATION

This degree is offered through a program of the Evening College of the University. For further information, see the section on the "Evening College."

DOCTOR OF EDUCATION

The program leading to the degree of Doctor of Education emphasizes educational psychology, guidance and counseling. The requirements for this degree closely parallel those for the degree of Doctor of Philosophy (see below). Applicants for admission to the program are required to submit results of the Graduate Record Examination. Foreign students may be excused from this admission requirement.

DOCTOR OF PHILOSOPHY

Only such candidates as give evidence of general proficiency, power of investigation and high attainments in the special fields in which their major subjects lie will be encouraged to proceed to the degree of Doctor of Philosophy.

Residence: The minimum requirement is one year of full-time study, or its equivalent in part-time work, in residence which is broadly defined as graduate work done at Clark University under the immediate personal supervision of at least one member of the University faculty. If the degree of Master of Arts has been earned at Clark, this requirement is an addition to the residence requirement for that degree. For the degree of Doctor of Philosophy, four courses (1965-66: 24 semester hours), or the equivalent in half-courses, is a normal full-time program.

Foreign Language: A prospective candidate must pass an examination in the reading of a modern foreign language to be chosen at the discretion of his department from the following: French, German, Russian, Spanish. The examination, conducted by a committee composed of representatives from the graduate department and the language department, should be passed at the latest before filing application for admission to candidacy.

Each graduate department may make such additional language or related requirements as the student's field of research may demand, and must report such requirements in each case to the Dean of the Graduate School.

Preliminary Examination: Upon completion of preparation in his fields of study a prospective candidate takes a preliminary examination set by his major department. This examination may be written or oral, or a combination of both. The chairman of the department may invite non-members of the department from within or without the University to participate in the examination.

Candidacy: Applications for admission to candidacy must be filed with the Dean of the Graduate School no later than November 1st in any academic year by students who hope to receive the degree at the end of that academic year.

An application for admission to candidacy will be considered by the Graduate Board when the applicant has (1) completed two full academic years of graduate work, or its equivalent in part-time work, including one year at Clark University; (2) passed the required examination in a foreign language, (3) passed a preliminary examination in his chosen field of study; (4) obtained the written endorsement of his major department; and (5) paid the diploma fee and publication fee.

Candidacy for the degree of Doctor of Philosophy is valid through the fourth commencement after admission to candidacy. For satisfactory reasons, candidacy may be extended once for an additional period of three years by vote of the Graduate Board. If candidacy expires without the degree having been awarded, the diploma fee and publication fee, less any expenses incurred, are returned.

Dissertation: A dissertation which is expected to make an original contribution to some special field of knowledge is required of each candidate. The dissertation, approved by the chief instructor, is laid before the examining committee at the final oral examination.

An abstract of the dissertation, not exceeding 600 words in length, and a précis, not exceeding 75 words, both approved by the instructor under whom they were written, are also required.

Not later than four weeks before the commencement at which the degree is to be conferred, the first, or ribbon, copy of the dissertation, together with two official title pages, an academic history page, the first copy of the abstract and of the précis, each in a form prescribed, must be delivered to the Registrar. At the same time, a second copy of the dissertation and of the abstract may be required by the major department. The title page, précis and academic history forms are obtainable from the Registrar. The ribbon copy of the dissertation must be typed on prescribed paper, marginally ruled in black, obtainable at the University Bookstore.

The Registrar deposits the dissertation and the abstract in the University Library where they remain permanently. A microfilm copy of each dissertation is made by University Microfilms, Inc., of Ann Arbor, Mich., and is available for duplication by them on request. The abstract is printed in *Dissertation Abstracts;* the précis is printed by the University in an annual publication, *Dissertations and Theses.*

Final Examination: The final examination is oral and lasts for at least two hours. Additional written examinations may be given if the major department so directs. The candidate is expected to defend his dissertation and, at the discretion of the examining committee, may be questioned on the entire special field of his study. The oral examination is conducted by a committee of at least four members, composed of the chairman of the department, at least one other member of the Graduate Board, and such members of the department and non-members from within or without the University as the chairman may appoint. The chairman notifies the Dean of the Graduate School, at least one week in advance, of the time and place of the examination and the composition of the committee. The Dean is authorized to invite any person from within or without the University to be present and to assist in the examination.

GRADUATE SCHOLARSHIPS, FELLOWSHIPS AND ASSISTANTSHIPS

Graduate fellowships and scholarships are provided for well-qualified, full-time graduate students by the University from endowed funds and from other sources. Financial aid to graduate students is available also in the form of grants from a number of special funds, and in some departments, from sponsored research grants. A limited amount of part-time employment is available in the various offices and departments of the University. Frequently, as in the case of departmental assistants, this employment yields useful experience.

Application: Application for a scholarship or fellowship to begin in September should be made before March 1 to the chairman of the department in which the applicant expects to do his major work. Late applications are acted upon periodically. All applications, after endorsement by the department, go to the Graduate Board for final action.

According to an agreement among the members of the Association of American Universities, elections of fellows and scholars will be communicated on April 1, to each successful candidate.

Research Fellowships: These fellowships may be awarded to graduate students who have fulfilled their residence requirements and who are pursuing a full-time doctoral program.

Teaching Assistant Scholarships or Fellowships: These may be awarded to teaching assistants who are engaged in full-time activity on campus, of which approximately half-time is devoted to teaching duties and approximately half-time, up to a maximum of three courses, is devoted to graduate study.

Teaching Assistantships: In several departments, teaching assistantships, involving less than half-time, are available with stipends which vary accordingly to the amount of service agreed upon.

Assistantships: In several departments, assistantships are available. They involve a variety of services with stipends to correspond, and usually provide the student with experience which will be useful in his later professional work.

Graduate Fellowship and Scholarship Funds: Stipends for graduate fellowships and scholarships are provided by:

THE GEORGE FRISBIE HOAR FUND, the gift of Andrew Carnegie in honor of the second president of the University's Board of Trustees;

THE AUSTIN S. GARVER FUND, a bequest from Austin S. Garver, member of the Board of Trustees from 1908 to 1918;

THE CHARLES H. THURBER FUND, provided by Charles H. Thurber, member of the Board of Trustees from 1913 to 1938 and president of the board from 1919 to 1937;

THE GEORGE S. BARTON FUND, a bequest from the Hon. George S. Barton of Worcester, to be used for the benefit of native-born citizens of Worcester;

THE ALUMNI ASSOCIATION FUND, provided by alumni who hold the degree of Doctor of Philosophy to benefit students studying for that degree;

and THE JOSEPH F. DONNELLY MEMORIAL FUND, a bequest from Lucretia F. Donnelly to help men who are enrolled in a course leading to the degree of Doctor of Philosophy.

GRADUATE AID

THE JOHN WHITE FIELD FUND, established by Mrs. Eliza W. Field to provide for the minor needs of a scholar or fellow;

THE ELIZA D. DODGE FUND, to be granted to graduate students of limited means who are engaged in research work;

THE MYERS FUND, a gift of George E. Myers, Ph.D., '06, to assist graduate students to do research in education and psychology.

GRADUATE LOANS

Loans, bearing interest at three percent per year, are available for graduate students from these funds:

THE MARY S. ROGERS SCHOLARSHIP AND LOAN FUND, established in 1926 for the benefit of students in the graduate school;

and THE SARAH M. THURBER LOAN FUND, established by the late Dr. Charles H. Thurber, former president of the University Board of Trustees, as a memorial to his mother.

NATIONAL DEFENSE STUDENT LOANS

These loans are available to graduate students, especially those with superior records who desire to teach in elementary or secondary schools or who have special aptitude in science, mathematics or a modern foreign language. Applications for these loans should be made at the College Financial Aid Office.

DEPARTMENTAL FUNDS

THE WALLACE W. ATWOOD RESEARCH FUND. The income of this fund may be used at the discretion of the Staff in the Graduate School of Geography for the promotion of field studies in geography by any member of the Staff, or any one of the alumni holding a graduate degree from the Graduate School of Geography, or for the publication of results of such research work.

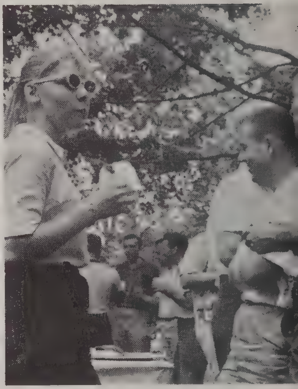
THE CHESTER BLAND FUND. The income of this fund is preferably used to provide aid to a promising student, either in residence or engaged in research elsewhere under the direction of the Department of History, Government and International Relations. It may also be used to defray the expense of visiting lecturers or of departmental research.

THE WALLACE W. GREENWOOD FUND. The income only is to be divided between the Departments of Physics and Chemistry and to be used for any purpose within the scope of these two departments.

THE MORTON L. "SONNY" LAVINE FOUNDATION, a memorial to Lieutenant Lavine of the United States Army, World War II. The income is to be used for the promotion of research in the Department of History, Government and International Relations.

THE LIBBEY FUND, bequeathed to the University by Mary E. Libbey, is to establish a fellowship in Physical Geography and to aid the Department in that field.

THE SUMMER SCHOOL



The Summer School

SUMMER STUDY

Intensive instruction in numerous fields of study is offered through two summer programs: a six-week summer session and a three-week intersession program. A variety of courses is offered for undergraduates, graduate students and teachers. A student may take three semester courses (9 semester hours of credit) by attending the Intersession and the Summer Session. Evening courses are also available during the summer to all students to continue their education while engaged in day-time employment. The student is encouraged to attend informal afternoon seminars, conferences and week-end excursions to New England cultural centers.

DEGREES AND CREDIT

All courses offered in the Summer Session or Intersession programs are accepted at Clark for credit toward bachelor's degrees unless they are specifically limited in the description of the course. Many courses count toward the degrees of Master of Arts, Master of Arts in Education and Doctor of Philosophy. However, approval for such courses should be obtained in advance from the student's major department.

The degree of Master of Arts may be obtained in certain fields by completing successfully a full-time program for five summers. Students interested in such a program should discuss their plans with the chairman of the department concerned.

Graduate students formally registered in the Summer School may, with the approval of their major department, enroll in thesis courses under the direction of regular members of the staff.

Each single course offered in the Summer School is equivalent to a half-year course of the Clark academic year and yields three semester hours of credit. The double courses in languages and occasionally other subjects, which meet for two lecture periods a day for six and one-half weeks, are equivalent to year-courses or six semester hours.

A student may carry in a normal program one course in the Intersession and two courses in the Summer Session. Permission to carry an additional course may be granted but only in exceptional cases and with approval in writing prior to registration.

SUMMER SCHOOL CATALOG

Detailed information concerning the Summer Session and Intersession is contained in a Summer School catalog which may be received upon request from the director of the Summer School.

EVENING COLLEGE

The Evening College

GENERAL INFORMATION

The Evening College, established in 1953 as an institution devoted to adult learning, has three primary functions. With the conviction that education in our modern society must be a lifelong process, it provides university education for adults of all ages who seek further knowledge and personal development through selected studies in the broad areas of the liberal arts. Further, in recognition of the rapidly developing and changing needs of business and the professions, it provides courses designed to help working men and women improve their occupational skills and to prepare for positions of increased responsibility.

Secondly, the Evening College provides an opportunity for adults to earn the bachelor's degree, exclusively by evening study, through programs planned to meet the unique educational needs of the mature person. Formal programs are available leading to the degree of Bachelor of Science in either general studies or business administration. The Evening College also offers the Diploma in General Studies after completion of a short formal program in liberal education designed specifically for adults. The Evening College also offers the degree of Master of Business Administration.

Finally, as a community service, the Evening College organizes frequent non-credit short courses, institutes and seminars, which are tailored to the specific needs of various civic, professional and business groups.

ADMISSION

Students may be enrolled for either individual courses or formal programs of study.

Individual Courses: Admission to individual courses in the Evening College is open to all interested adults seeking to further their education. High school graduation is not required but

desirable. Continued attendance is contingent upon evidence of ability to profit from the instruction offered. Advanced courses for which prerequisite courses or experience are indicated are open only to persons who meet the stated requirements.

Admission To Formal Programs: Adults applying for a formal program of study in the Evening College will be required to submit records of their previous schooling prior to admission. Except under unusual circumstances applicants must possess a diploma from an accredited high school. Applicants for the Bachelor of Science degree or the Diploma in General Studies who have not attended college previously may arrange to have their high school records forwarded to the Evening College on forms supplied to them on request to the college. Adults who have attended other colleges should request that their transcripts be forwarded directly to the Evening College.

MASTER OF BUSINESS ADMINISTRATION

The Evening College offers a graduate program leading to the degree of Master of Business Administration. Established in 1962, the program is designed to provide the best possible education for men and women at the graduate level for careers in business. Through carefully selected substantive materials and an analytical approach to the practice of management, the program is designed to enable college graduates to supplement job experience in preparing for positions of executive responsibility. The course of study emphasizes administrative decision-making rather than details of initial positions in business. Qualified students may take advantage of the program while remaining in their present business activities and continuing to gain experience through evening programs of study. In offering the program, the Evening College seeks to broaden its services to the local community and to provide university education for adults at an additional level of formal study.

The curriculum consists of 30 semester hours of credit. Details of the curriculum, tuition and admissions requirements will be found in the Evening College Catalog.

EVENING COLLEGE CATALOG

Detailed information about the Evening College is contained in a special catalog available on request from the director of the Evening College.

DEPARTMENTS AND COURSES

Departments and Courses

CONTENTS

Listed on the following pages are department faculties, undergraduate and graduate programs and course offerings. The departments are listed in alphabetical order.

DEPARTMENT FACULTIES

The staff of each department is listed by rank and by alphabetical order within rank. Department chairmen are listed first. For further information concerning the faculty, see the general faculty listing.

DEPARTMENT PROGRAMS

Each department offers information concerning its undergraduate offerings and requirements as well as the offerings and requirements concerning graduate study, if a graduate program is offered. For further information concerning a major field of study, students should consult their faculty advisers or major department chairmen.

DEPARTMENT COURSES

The course offerings of each department are listed in their numerical sequence. The announced courses are subject to any modification which may become necessary.

COURSE NUMBERING SYSTEM

Each course is indicated by number and title. A course number, unmodified by "a" or "b" indicates a year-course, one which continues through two semesters of an academic year. A course number followed by an "a" refers to a half-course usually offered in the first semester. A number followed by a "b" refers to a half-course usually offered in the second semester.

Two-semester courses are divisible unless an explicit statement of indivisibility appears in the course statement. Courses which are indivisible normally require the successful completion of the first semester as a prerequisite to entering the second semester.

COURSE SEQUENCE

Courses are arranged, in general, in sequence progressing from elementary to advanced courses.

Courses which are *primarily for undergraduates* are designated by numbers beginning with the numeral *1*.

Courses for *advanced undergraduates and graduate students* are designated by numbers beginning with the numeral *2*.

Courses which are *primarily for graduate students* are designated by numbers beginning with the numeral *3*.

ORDER OF DEPARTMENTS AND OFFERINGS

The listing on the following pages is as follows:

Biology
Biomedical Engineering
Business Administration
Chemistry
Classics
Comparative Literature
Economics and Sociology
Education
English
Fine Arts
Freshman Orientation
Geography
Geology
German
History, Government and International Relations
Linguistics
Mathematics
Music
Philosophy
Physics
Psychology
Romance Languages
Russian

Biology

DEPARTMENT FACULTY

Rudolph F. Nunnemacher, Ph.D., *Professor of Zoology, Department Chairman*
Harris Rosenkrantz, Ph.D., *Professor (affiliate) of Biology*
Aldo P. Truant, Ph.D., *Professor (affiliate) of Biology*
Vernon Ahmadjian, Ph.D., *Associate Professor of Botany*
George Camougis, Ph.D., *Associate Professor (affiliate) of Physiology*
Donald S. Layne, Ph.D., *Associate Professor (Affiliate) of Biology, Director of Training*
Werner P. Koella, M.D., Prof. (Affiliate) of Neurophysiology
John T. Reynolds, Ph.D., *Associate Professor of Microbiology*
Joseph C. Curtis, Ph.D., *Assistant Professor of Biology*
Burton N. Gates, Ph.D., *Research Associate in Botany*
Ian D. K. Halkerston, Ph.D., Lecturer in Biology

UNDERGRADUATE PROGRAM

Biology 11 presents a comprehensive view which is prerequisite to all other courses in the department. A departmental major must take Biology 11, three advanced courses in biology, Chemistry 11, Physics 11, Mathematics 11 and at least one additional course in chemistry, physics or geology. Mathematics 11 does not count toward the fulfillment of the major requirements.

HONORS PROGRAM

An Honors Program is available to especially well qualified majors and encourages the student to engage in an independent research project during the senior year. Frequently the Honors Project is the continuation of research begun during the summer under the National Science Foundation Undergraduate Research Participation Program.

GRADUATE PROGRAM

The department offers courses leading to Master of Arts and Doctor of Philosophy degrees in specialized phases of botany, zoology, physiology and bacteriology. Admission to the graduate program assumes adequate preparation in the basic sciences, an overall undergraduate record of B or better, and satisfactory standing in the Graduate Record Examination. Tuition scholarships and Teaching Assistantships are available. More detailed information can be obtained by writing to the department chairman.

Master of Arts: The program usually requires three or four semesters of academic work, including participation in the Graduate Seminar—Biology 350, and research culminating in an acceptable thesis. Prior to or during the program the student must have a semester course beyond the introductory biology level in botany, zoology and physiology.

Doctor of Philosophy: The requirements are identical with those of the University and can be found in the catalog section on The Graduate School. The student's program is planned according to his needs with his program director.

TRAINING PROGRAM FOR STEROID BIOCHEMISTRY

A training Program for Steroid Biochemistry has been established at the University through the cooperation of the Departments of Biology and Chemistry with the Worcester Foundation for Experimental Biology with the support of the National Cancer Institute and the U. S. Public Health Service. Post-doctoral fellowships are available for persons possessing the Ph.D., M.D., or equivalent training. Further information may be obtained from the *Program Director, Dr. Donald S. Layne.*

COURSES

11. GENERAL BIOLOGY.

Principles and problems of biology. First semester is concerned with the botanical kingdom; second semester with the animal kingdom. One laboratory period per week. Indivisible course, except by consent of the department. Open to freshmen.
1st sem Mr. Ahmadjian, Mr. Reynolds | Mr. Nunnemacher. Mr. Curtis 2nd sem.

12~~a~~. Vertebrate Morphology (in 1964-65) ~~COMPARATIVE ANATOMY.~~

The morphology of vertebrates from a comparative standpoint, with emphasis on the evolution of animals from fish to mammals. Two lectures and two laboratory periods per week. Mr. Nunnemacher.

14a. CRYPTOGAMIC BOTANY. (Omitted 1964-65)

Morphology, physiology and ecology of the lower plants. Lectures will place special emphasis on algae, fungi, lichens and mosses. Laboratory work will be primarily concerned with experimentation on the sexuality and genetics of selected types of bacteria, fungi and algae. Field work will be included. Three lectures and one laboratory per week. Prerequisite: first semester, Biology 11. Mr. Ahmadjian.

15b. SYSTEMATIC BOTANY. Not offered, 1964-65.

Taxonomy and classification of flowering plants, with emphasis on New England flora. A collection of 100 plants is required as well as a two-day spring collecting trip to the Berkshires. Three lectures and one laboratory period per week. Prerequisite: first semester, Biology 11. Mr. Ahmadjian.

17b. GENERAL ECOLOGY. Not offered, 1964-65

Introductory study of the distribution of plants and animals, their inter-relationships and adaptions to a wide variety of environments such as seashore, sand dunes, woodlands and ponds. Field trips to Mt. Monadnock and other areas of ecological interest will be taken during laboratory periods or on Saturday. Three lectures and one laboratory period per week. Usually offered during the summer.

18b. GENETICS.

Principles and problems of genetics. Mr. Ahmadjian.

ADDITIONAL COURSES, 1964–65

19A MICROBIOLOGY (THREE LECTURE PERIODS AND ONE 3-HOUR LABORATORY PERIOD PER WEEK) MESSRS. AHMADJIAN & REYNOLDS

225A ELECTRON MICROSCOPY MR. CURTIS

243B ANIMAL PHYSIOLOGY (THREE LECTURE PERIODS PER WEEK) MISS ALICE T. O'MALLEY
NIH FELLOW IN BIOLOGY

281A LICHENOLOGY (SPEC. SEMINAR FOR GRADUATE STUDENTS) MR. AHMADJIAN

120b. HISTOLOGY. Not offered, 1964-65
Comprehensive course on tissue structure, with emphasis on the study of mammalian tissues. Two lectures and two laboratory periods per week. Mr. Nunnemacher.

121b. EMBRYOLOGY. Not offered, 1964-65.
Consideration of the fundamentals of vertebrate embryology. Two lectures and two laboratory periods per week. Mr. Nunnemacher.

137a. CELLULAR BIOLOGY.
Development and implications of modern concepts of cells and their activities. Three lectures per week. Prerequisite: Biology 11 or its equivalent. Mr. Curtis

140a. PRINCIPLES OF PHYSIOLOGY. Not offered, 1964-65
Introduction to basic physiological concepts at the cellular level followed by animal physiology, with emphasis on vertebrates. Three lectures per week. Prerequisite: Biology 11.

201b. ADVANCED SYSTEMATIC BOTANY. Not offered, 1964-65 Mr. Ahmadjian.

204b. LICHENOLOGY. Not offered, 1964-65
Taxonomy and physiology of lichens and isolated lichen components. Laboratory emphasis on special projects and field work. Three lectures and one laboratory period per week. Prerequisite: Biology 14a or consent of the instructor. Mr. Ahmadjian.

215a. INVERTEBRATE ZOOLOGY. Not offered, 1964-65.

222. ADVANCED EMBRYOLOGY. Not offered, 1964-65
Introduction to experimental morphogenesis. Consideration of the chemical and physical events associated with cellular differentiation, tissue interactions and growth regulation during embryonic development. Three lectures per week. Prerequisite: Biology 121. Mr. Curtis.

224a. NEUROANATOMY. Not offered, 1964-65.
The structural and functional organization of the human central nervous system. Three lectures or demonstrations per week. Prerequisite: Biology 12 or consent of the instructor. Mr. Nunnemacher.

230a. BACTERIOLOGY.
Biology of the bacteria and certain related forms. Three lectures and one laboratory period per week. Prerequisites: Biology 137a, Chemistry 13 (second semester of Chemistry 13 may be taken concurrently) and consent of the instructor. Mr. Reynolds.

231b. BACTERIAL PHYSIOLOGY. Not offered, 1964-65.
Lecture topics and laboratory exercises selected to demonstrate chemical and physical principles underlying bacterial activities. Two lectures and two laboratory periods per week. Prerequisites: Biology 230b and consent of the instructor. Biology 240a is recommended. Mr. Reynolds.

232b. ADVANCED BACTERIOLOGY.
Two lectures and two laboratory periods per week. Prerequisites: Biology 231b and consent of the instructor. Mr. Reynolds.

ADDITIONAL COURSES, 1964–65

282A NEUROANATOMY MR. NUNNEMACHER
283B EXPERIMENTAL MORPHOGENESIS (THREE LECTURE PERIODS PER WEEK) MR. CURTIS
284B BIOLOGICAL OCEANOGRAPHY (THREE HOURS PER WEEK) MR. REYNOLDS
(TRAVEL FEE MAY BE REQUIRED)
381B SEMINAR IN LICHENOLOGY MESSRS. AHMADJIAN & REYNOLDS

240a. General Physiology. Not offered, 1964-65.

Introduction to the physical and chemical phenomena underlying the functions common to living organisms. Two lectures and two laboratory periods per week. Prerequisites: Biology 11, Chemistry 11 and Physics 11.

241~~b~~a. Endocrinology. Mr. Halkerston

242a. Comparative Animal Physiology. Not offered, 1964-65.

244b. Biochemistry. Mr. Rosenkrantz

The principles of mechanisms of biochemical reactions in an understanding of the metabolism of foodstuffs and the role of enzymes, vitamins and hormones. An acquaintance with the instrumentation in biochemical research will be presented. Prerequisite: Chemistry 13. Three lecture periods per week. Mr. Rosenkrantz.

249b. Neurophysiology. Not offered, 1964-65.

Physiology of central and peripheral nervous systems, receptors and muscles, considered in both vertebrates and invertebrates. Three lectures and one laboratory period per week. Prerequisite: Biology 140b or 240a.

250a. Undergraduate Seminar in Biology. Not offered, 1964-65

Designed to provide experience for advanced undergraduates in the presentation and critical evaluation of research reports. Limited enrollment. Equivalent of three lectures per week. Prerequisite: consent of the instructor. Mr. Reynolds.

257b. Biophysics. Not offered, 1964-65.

Consideration of the physical properties of biological systems. Influence of various physical agents upon biological structure and function. Physical methods of analysis of biological macromolecules. Three lectures per week. Prerequisite: consent of the instructor. Mr. Curtis.

260-265. Special Problems. 261 - Botany 263 - Microbiology
262 - Zoology 264 - Cytology

Advanced semi-independent study of an approved topic under the direction of a departmental member. Hours and credit to be arranged. Required for honors in biology. Staff.

S. 267. Instrumental Procedures in Biological Investigations. Not offered, 1964-65

Theory and application of various analytical procedures and use of modern instrumentation in biological problems. Practical introduction to analytical balance, centrifuge, vacuum distillation, pH, dialysis, chromatography, counter-current distribution, photoelectric colorimetry, fluorometry, turbidometry, spectrophotometry and spectroscopy. Instrumentation will be coordinated with techniques of tissue preparation, histochemistry and radioactive tracers. Offered in the summer. Mr. Rosenkrantz.

268a. Principles of Pharmacology. Not offered, 1964-65.

This course is intended to acquaint the student or research worker with established principles and the more important phenomena involved in the study of pharmacology. Particular emphasis is placed on the quantitative aspects of the interaction of chemical compounds or drugs with biological systems. The principal pharmacological actions of several important drugs are illustrated. Mr. Truant and Staff.

300. Readings and Research in Biology. Staff.

350. Graduate Seminar. Staff.

351a. Seminar in Ultrastructure. Not offered, 1964-65.
Discussion of the structure of macromolecules and organelles in relation to their biological functions. Evidence from a variety of physical and chemical methods will be included, with emphasis on electron microscopy. Hours to be arranged. Prerequisite: consent of the instructor. Staff.

360. Master's Thesis. Staff.

390. Doctoral Dissertation. Staff.

Biomedical Engineering

The Program in Biomedical Engineering is a graduate program under the joint sponsorship of Clark University and Worcester Polytechnic Institute. The aim of the program is to combine the resources of the two institutions to provide special education in this rapidly developing interdisciplinary area. Students entering the program must have a bachelor's degree in mathematics or one of the basic or engineering sciences. The degree program will include a minimum of 5 full courses taken at both institutions and leading to a master's degree. All students will be expected to achieve some basic knowledge in biology, chemistry, engineering, mathematics and physics. Since a thesis on research is also required, the program will normally require at least two years of study. In general, the requirements for the degree will be consistent with the requirements for master's degrees at both institutions. The detailed requirements for each student will be worked out by a Committee on Biomedical Engineering made up of faculty members from both institutions. Students enrolled at Clark will receive an M.A. in Biomedical Engineering, the actual degree noting the cooperation of W.P.I. Conversely, students enrolled in the first instance at W.P.I. will receive the M.S. in Biomedical Engineering, with the cooperation of Clark indicated on the degree.

For further information, write to: Director, Biomedical Engineering Program, Clark University, Worcester, Massachusetts 01610.

Business Administration *(Division)*

DEPARTMENT FACULTY

Howard W. Nicholson, Ph.D., *Professor of Economics*

George E. Hargest, M.B.A., *Associate Professor of Economics and Business Administration, Acting Director of Division of Business Administration*

George A. Balko, Jr., M.B.A., *Assistant Professor of Economics and Business Administration*

Frederick E. Bamford, M.B.A., *Assistant Professor of Economics and Business Administration*

UNDERGRADUATE PROGRAM

The Division of Business Administration presents and supervises a four-year course of study leading to the degree of Bachelor of Science in Business Administration. The program is given cooperatively by the departments of Economics and Sociology, English, History, Government and International Relations, Mathematics, Psychology and the Natural and Physical Sciences. General supervision of the program rests with the Director and the Administrative Committee representing the faculty.

For the special requirements for the degree of Bachelor of Science in Business Administration, see that section listed under degree requirements. Students should note that the following business administration courses may not be counted toward the degree of Bachelor of Arts: 104a, 152b, 154b, 172a, 174b, 176a, 202, 204b, 206, 253, 254b, 281b.

COURSES

Accounting

100. Introduction to Managerial Accounting.
Approaching accounting as a tool of management, the course includes the development of the accounting cycle, the preparation and analysis of financial statements, fund flows, cost data, and the needs of management. Mr. Hargest.

102. Intermediate Accounting.
Accounting principles and procedures and their application to asset, liability and proprietorship accounts. Analysis of financial statements, including statements from incomplete data and the statement of application of funds. Emphasis is on problem analysis and solution. Indivisible course. Prerequisite: B.A. 100. Mr. Hargest.

103a. Financial and Managerial Accounting.
Accounting for managerial decisions through the analysis and interpretation of financial data, cost concepts and applications, cost controls, cost-volume profit relationships, budgeting, and profit planning. Prerequisite: B.A. 100. Mr. Hargest.

104a. Federal Tax Accounting. Not offered, 1964-65
Legal and accounting fundamentals of federal income and social security taxes with emphasis on the preparation of returns. Prerequisite: B.A. 100.

202. Cost Accounting. Not offered, 1964-65.
Basic principles of cost accounting as related to job order, process, estimated and standard cost systems. Cost for profit determination and for managerial control and decision-making are considered. Offered in alternate years. Prerequisite: B.A. 102 or consent of the instructor. Mr. Hargest.

204b. Auditing. Not offered, 1964-65
Analysis of the purpose and scope of the several classes of audits and discussion of professional ethics, auditing standards, internal control systems, audit procedures applicable to asset, liability and proprietorship accounts, and the use of worksheets and preparation of statements and reports. Prerequisite: B.A. 102.

206. Advanced Accounting. Not offered, 1964-65.
Theory and practice of accounting for branches, mergers, receiverships, estates and trusts, consolidated statements, budgets, municipal accounts, and other topics of advanced nature. Offered in alternate years. Prerequisite: B.A. 102.

Clark University
INTERDEPARTMENT COMMUNICATION

February 26, 1965

G. Hargest

TO: Mrs. Lydia Colby
FROM: George E. Hargest, Acting Director, Division of Business Administration
RE: Divisability of B. A. 100

This year the approach in B. A. 100 was changed to that of Managerial Accounting and the course is sufficiently self-contained in each semester to warrant credit for the first semester without having the student continue in the second. During last year, slight changes were made so that I feel that credit for the first semester (Fall of 1963) could also be granted if the student did not continue in the second semester. I therefore feel that those students who took the first semester of B. A. 100 (in the Fall of 1963) and dropped the course should be given credit for the first semester.

GH:msb

Economics and Finance

Descriptions of these courses can be found in the announcement of the Department of Economics and Sociology.

ECONOMICS 11. PRINCIPLES OF ECONOMICS.
Required of B.S. in B.A. degree candidates.

ECONOMICS 13a. MONEY AND BANKING.
Required of B.S. in B.A. degree candidates.

ECONOMICS 13b. PROBLEMS IN MONEY AND BANKING.

ECONOMICS 15a. PUBLIC FINANCE.

ECONOMICS 140b. CONSUMER ECONOMICS.

ECONOMICS 21b. NATIONAL INCOME ANALYSIS.

ECONOMICS 22. LABOR ECONOMICS AND LABOR PROBLEMS.

ECONOMICS 24b. HISTORY OF ECONOMIC DOCTRINE.

ECONOMICS 25b. PROBLEMS IN PUBLIC FINANCE.

ECONOMICS 26. INDUSTRIAL ORGANIZATION AND GOVERNMENTAL CONTROL.

ECONOMICS 29a. ECONOMICS OF TRANSPORTATION.

ECONOMICS 205a. INTERMEDIATE ECONOMIC THEORY.

ECONOMICS 207. INTERNATIONAL ECONOMICS.

ECONOMICS 211b. COMPARATIVE ECONOMIC SYSTEMS.

ECONOMICS 231b. ECONOMIC HISTORY OF THE UNITED STATES.

120~~b~~a. CORPORATION FINANCE.
Financial structure of modern industry with emphasis on the nature of the business corporation, its financial practices, types of securities, capital structure, financial reorganization, and the problems of internal financial control. Prerequisite: Economics 11. Required of B.S. in B.A. degree candidates. Mr. Nicholson.

121b. INTRODUCTION TO INVESTMENTS. ~~Not offered, 1964-65.~~
Principles underlying investment analysis and policy; salient characteristics of governmental and corporate securities; policies of investment companies and investing institutions, relation of investment policy to money markets and business fluctuations; security price-making forces, construction of personal investment program and exchange operation. Prerequisite: B.A. 120b. Mr. Nicholson

Management and Personnel Administration

170b. PRINCIPLES OF MANAGEMENT.
The principles disclosed through a study of planning, organizing, directing, assembling resources and controlling which apply equally to all fields of administration. Required of B.S. in B.A. degree candidates. Mr. Bamford.

172a. INDUSTRIAL MANAGEMENT. Not offered, 1964-65.
A survey of the techniques of executive control of manufacturing operations with special reference to such fields as specialization of labor, expansion, control of factors of production and internal organization. Mr. Bamford.

176a. PRODUCTION MANAGEMENT: ANALYSIS. Not offered, 1964-65.
The problems of management in production are analyzed and the use of modern managerial decision-making processes are employed. Prerequisite: B.A. 170b. Mr. Bamford.

182b. INTRODUCTION TO PERSONNEL MANAGEMENT. Not offered, 1964-65

184a. MANAGEMENT-LABOR RELATIONS. Not offered, 1964-65.
Management-employee relationships with special reference to union and management bargaining. Opportunity for development of perspective and judgment regarding problems of management in shop industrial situations and labor relations law. Discussion and case methods are employed. Prerequisite: Economics 11.

191. INTRODUCTION TO QUANTITATIVE ANALYSIS FOR BUSINESS DECISIONS.
Not offered, 1964-65.
Some applications of the notions of probability and utility to the making of business decisions under conditions of certainty and uncertainty. Mr. Bamford.

271. MANAGEMENT: DECISION-MAKING.
Designed to describe quantitative methods which are useful in business decision-making, the course develops quantitative models and techniques of application. Prerequisite: B.A. 170b. Mr. Bamford.

272. MANAGEMENT POLICIES. Not offered, 1964-65.
Actual problems of representative business concerns based on specific case studies. Administrative coordination, business research, business policies, development of master plans and operating budgets, measurement of administrative effectiveness. Prerequisite: B.A. 172a. Mr. Bamford.

273a. THE FINANCE FUNCTION IN MANAGEMENT. Not offered, 1964-65.
The tools of financial analysis are developed and applied to the pertinent areas of planning, control and decision-making. The finance function in relation to other management functions will be emphasized. Prerequisite: B.A. 100 and B.A. 170b.
Mr. Bamford.

275a. ORGANIZATION THEORY.
Basic principles of organization with reference to promotion, formal and informal organization, departmentalization, line-staff relationships, decentralization and centralization, communication and the organization's bargaining relations with other organizations. Prerequisite: B.A. 170b. Mr. Bamford.

276a. MANAGERIAL ECONOMICS. Not offered, 1964-65.
Economic concepts are analyzed and evaluated in terms of their applicability to the development of business policies. The criteria of usefulness are consistency of thought and measurability of the variables under consideration. Prerequisite: Economics 11.

290. Analysis of Business Problems.
The course is designed to integrate principles covered in specialized Business Administration courses bringing business as a whole and its economic problems into perspective. Required of all seniors in the Business Administration program. Indivisible course.
Mr. Balko.

Marketing

150a. Principles of Marketing.
The efficiency, social implications and public control of the activities and practices of business institutions in effecting a flow of tangible commodities between producer and consumer. Required of B.S. in B.A. degree candidates. Mr. Balko.

152b. Advertising Management.
Advertising as a tool of marketing, economic functions of advertising, advertising research, media selection, advertising organizations and testing. Mr. Balko.

154b. Retailing Principles. Not offered, 1964-65.
The retailer in our economy, the store and its organizations, aspects of buying and selling, operating activities and personnel, and retail control. Offered in alternate years.

252a. Marketing Research.
Problems faced by business executives in marketing and the ways in which methods of scientific business research can be utilized for their solution. Prerequisites: Economics 11 and B.A. 160, or the equivalent. Offered in alternate years. Mr. Balko.

253b. Sales Forecasting.
Application of statistical procedure to the problems of predicting market demand and sales of the individual firm. Prerequisites: Economics 11 and B.A. 160, or the equivalent. Offered in alternate years. Mr. Balko.

254a. Sales Management. Not offered, 1964-65.
The organization and direction of the efforts of a sales force, involving the establishment of a sales plan, placing the sales department in the company organization, formulating sales policies, organizing the sales department, recruiting, training, equipping, motivating and compensating salesmen, and measuring their performance. Prerequisites: B.A. 150a and B.A. 170b or their equivalent. Mr. Balko.

255b. Marketing Policies. Not offered, 1964-65.
Analysis of how competition, demand, cost, distribution structure and legislation affect marketing decisions of the individual company in regard to products, brands, channels of distribution, selling, advertising, sales promotion and prices. Prerequisites: Economics 11 and B.A. 150a or their equivalent. Mr. Balko.

Statistics

160. Business Statistics.
Statistical methods and techniques applied to data drawn from the business community. Includes sampling, statistical inference, estimation and decision-making, correlation—linear, multiple and curvilinear, analysis of time series and index numbers. Prerequisite: Mathematics 11. Required of B.S. in B.A. degree candidates. Indivisible course. Students ranking high in Mathematics 11 may, with the division director's consent, meet the requirement for B.A. 160 by taking Economics 29a. Mr. Hargest.

Honors

199b. JUNIOR HONORS PROGRAM.
Guided study for juniors planning to take B.A. 299 in their senior year. Staff.

299. SENIOR HONORS PROGRAM.
Independent study of an approved topic for candidates for honors in accounting, management or marketing. Prerequisite: B.A. 199b. Staff.

Candidates for honors in economics should register for Economics 280b and Economics 28.

Chemistry

DEPARTMENT FACULTY

Thomas T. Sugihara, Ph.D., *Professor of Chemistry, Department Chairman*
Gerson Kegeles, Ph.D., *Professor of Chemistry*
Eugene L. Hess, Ph.D., *Professor (affiliate) of Chemistry*
Edward N. Trachtenberg, Ph.D., *Associate Professor of Chemistry*
Allan M. Zwickel, Ph.D., *Associate Professor of Chemistry*
Wen-Yang Wen, Ph.D., *Assistant Professor of Chemistry*

UNDERGRADUATE PROGRAM

In offering a variety of introductory courses in the major branches of modern chemistry, the department seeks to satisfy the needs and desires of (1) those interested in pursuing a career in chemistry, (2) those in related science areas, the proper understanding of which requires a background in chemistry, and (3) the non-scientists who want some knowledge of chemistry as part of their liberal education. In addition to these courses, a large number of more specialized subjects are treated in advanced courses.

The requirements for a major are Chemistry 13, 113, 14a, 19 and 290a; Physics 11 and Mathematics 12; and three one-semester electives of which one must be in chemistry and the other two in mathematics beyond Mathematics 12, in physics beyond Physics 11, or in biology. These requirements must be met starting with the class of 1968; earlier classes require Chemistry 11, 13, 14a, 19, 290a, two semesters of chemistry electives, Physics 11 and Mathematics 12.

Majors are urged to take further courses in mathematics and at least two years of German. Those who intend to do graduate work in chemistry are further advised to acquire a reading knowledge of either French or Russian.

An entering student with a sound background in chemistry is encouraged to take a placement examination given at the beginning of the academic year. Satisfactory performance on this examination can satisfy the Chemistry 11 prerequisite for Chemistry 13. This will permit completion of the requirements for the major no later than the junior, and in some cases the sophomore year, leaving the student's senior year open for more sophisticated pursuits. Among these are the honors program and an Undergraduate

Research Participation Program sponsored by the National Science Foundation. The latter program also is open to anyone who has completed his freshman year; for further information, consult the Program Director, Mr. Trachtenberg.

GRADUATE PROGRAM

The department offers programs leading to the degrees of Master of Arts and Doctor of Philosophy with specialization in various fields of chemistry and in chemical physics. The requirements for the Master's degree are essentially those of the University, q.v.

Entering students must take placement examinations in the basic areas of undergraduate instruction; these examinations are used solely for the purpose of arriving at a satisfactory program of courses.

The course requirements for the Ph.D. are as follows:

1. All students must demonstrate satisfactory performance (B- or better) in Chemistry 230a, 322a, 379b, and Chemistry 340a. Students specializing in organic or biochemistry may substitute 290a for 340a.
2. All students must demonstrate satisfactory performance (B- or better) in at least two of the following courses: Chemistry 212a, 218a, 280b, 321b, 323b, 333b, 361b, and 369a.
3. Additional courses may be suggested by the student's research supervisor.

Qualifying and preliminary examinations must be passed, and the University language requirement must be met. Students not satisfying the University requirement in German but requiring it for their research may be asked to satisfy the department as to their proficiency in reading scientific German. For further details on formal requirements consult the appropriate departmental publications.

The doctoral program in chemical physics is jointly administered by the Departments of Chemistry and Physics. It differs from the above in that placement examinations are not required, physics requirements are substituted for some of the chemistry requirements, and research is carried out in the Department of Physics.

Graduate scholarships, teaching assistantships, and research fellowships are available. Further information on these may be obtained from the department chairman.

COURSES

11. General Chemistry.

Systematic study of the elements and their principal compounds and the fundamental laws and theories of chemistry. Three lectures and three laboratory hours per week. Laboratory fee. Prerequisite for all other courses in chemistry. Divisible with consent of the instructor. Mr. Zwickel, Mr. Wen.

13. Organic Chemistry.

Lectures on the principles of organic chemistry and a laboratory study of the preparation and properties of important organic compounds. Three lectures and three laboratory hours per week. Students who take Chemistry 13 and 113 concurrently do not participate in the laboratory of 13. Laboratory fee. Prerequisite: a grade of C- or better in Chemistry 11. Mr. Trachtenberg.

14a. Analytical Chemistry.

Theoretical and descriptive inorganic chemistry. Laboratory synthesis and analysis of simple inorganic systems. Three lectures per week for the first 10 weeks of the semester (none thereafter) and six laboratory hours per week throughout the semester. Laboratory fee. Prerequisite: Chemistry 11. Mr. Zwickel.

19. PHYSICAL CHEMISTRY.
Principles of physical chemistry applied to gases, liquids, solutions, crystalline solids; chemical thermodynamics, homogeneous and heterogeneous equilibria, electrolytic conductance and transference, electromotive force, reaction kinetics, colloids. Three lectures and three laboratory hours per week. Laboratory fee. Prerequisites: Physics 11, Math. 12, a grade of C or better in Chemistry 11 or 13; Chemistry 13, 14a, may be taken concurrently. Additional course work in mathematics is recommended. Mr. Kegeles.

113a. ORGANIC CHEMISTRY LABORATORY.
A laboratory study of the preparation and properties of important classes of organic compounds. 1 hour conference and 7 hours of laboratory per week. Labratory fee. Must be taken concurrently with Chemistry 13 lectures. No credit. Mr. Trachtenberg.

113b. QUALITATIVE ORGANIC ANALYSIS.
Laboratory study of the identification of organic compounds by both classical and modern instrumental techniques. Laboratory fee. Prerequisite: Chemistry 113a and 13 concurrently or 13 previously. 1 hour conference, 7 hours of laboratory per week. Mr. Trachtenberg.

212a. INORGANIC CHEMISTRY.
Theoretical and descriptive inorganic chemistry. Not open to those who have taken 14a after 1962. Prerequisite: concent of the instructor. Mr. Zwickel.

214. SPECIAL PROJECTS.
Individual work of an investigative nature which may include a search of chemical literature as well as laboratory work. Staff.

215. HONORS COURSE.
Primarily for majors seeking departmental honors in chemistry. A laboratory research project. Staff.

218a. BIOCHEMISTRY. Not offered, 1964-65.

218b. BIOCHEMISTRY. Not offered, 1964-65.

230a. PHYSICAL ORGANIC CHEMISTRY.
Fundamentals of organic chemistry. Molecular structure, acidity and basicity, kinetics and mechanisms with emphasis on the most recent advances in organic chemical theory. Prerequisite: Chemistry 13 and 19 or permission of the instructor. Mr. Trachtenberg.

280b. INSTRUMENTAL METHODS.
The principles and application of modern instrumental techniques to the separation and analysis of mixtures and for the characterization of pure compounds. Two lectures and six laboratory hours per week. Laboratory fee. Prerequisite: Chemistry 290a or consent of the instructor. Staff.

290a. ADVANCED PHYSICAL CHEMISTRY.
Elementary quantum-mechanical treatment of the structure of nuclei, atoms and molecules. Statistical mechanics of simple systems. Three lectures per week. Prerequisite: consent of the instructor. Mr. Sugihara.

300. RESEARCH. Staff.

242b. Nuclear + Radiochemistry Mr. Sugihara
Three lectures per week.

321b. Colloid Chemistry.
Osmotic and sedimentation equilibrium. Diffusion, sedimentation velocity, countercurrent distribution and chromatographic theory. Kinetics of rapid macromolecular interactions. Offered in alternate years. Mr. Kegeles.

322a. Thermodynamics.
Applications of classical thermodynamics to chemical systems. Mr. Kegeles.

323b. Statistical Mechanics.
Statistical mechanical analogs of thermodynamic functions and their application to chemical systems. Prerequisites: Chemistry 322a and 340a, or their equivalents. Mr. Wen.

324b. Refractometric Techniques. Not offered, 1964-65.
Applications of refractometric and interferometric methods to the study of optically inhomogeneous media. Methodology employed in electrophoresis, ultracentrifugation, diffusion and chromatography. Offered in alternate years. Mr. Kegeles.

331b. Advanced Physical Organic Chemistry. Not offered, 1964-65.
Modern interpretation of organic reaction mechanisms including molecular rearrangements, chain reactions and other reactions not covered in Chemistry 230a. Prerequisite: Chemistry 230a. Offered in alternate years. Mr. Trachtenberg.

333b. Synthetic Organic Chemistry.
Lectures on synthesis of organic molecules emphasizing scope and limitations of general methods, mechanism and stereochemistry. Synthesis of carbon to carbon bonds, oxidation and reduction. Prerequisite: Chemistry 230a or permission of instructor. Offered in alternate years. Mr. Trachtenberg.

340a. Quantum Chemistry I.
Elementary quantum mechanics of simple systems, properties of wave functions, approximation methods for complex systems. Mr. Sugihara.

341b. Quantum Chemistry II.
Atomic and molecular systems, interaction between atoms. Prerequisite: Chemistry 340a. Offered in alternate years. Mr. Sugihara.

342b. Nuclear and Radiochemistry. Not offered, 1964-65.
Fundamentals of nuclear science; production, isolation, identification and measurement of radioactive atoms. Prerequisite: Chemistry 340a or Chemistry 290a. Offered in alternate years. Mr. Sugihara.

343b. Theories of Nuclear-Reaction Mechanisms.
Current theories and models on mechanisms of nuclear reactions at medium and high energies. Prerequisites: Chemistry 340a and 342b, or their equivalents. Offered at the discretion of the department. Mr. Sugihara.

350. Seminar.
Reports on research work and discussions of recently published work.
Guest Lecturers, Staff and Graduate Students.

360b. Coordination Compounds.
Chemical and physical properties of complexes, including theories of coordination, stereoisomerism, reaction mechanisms and solution stabilities. Offered in alternate years. Mr. Zwickel.

361b. Molecular Structure. Not offered, 1964-65.
Physical methods relevant to the determination of the structure of molecules (x-rays, electron diffraction, nuclear magnetic resonance, electronic properties, etc.). Prerequisite: Chemistry 290a or consent of the instructor. Offered in alternate years. Mr. Zwickel.

369a. Electronic Spectroscopy.
Introduction to the studies of ultraviolet and visible absorption spectra as well as emission spectra. Prerequisite: consent of the instructor. Mr. Wen.

379b. Special Topics.
Research seminars; reports by graduate students.

380. Research Conference.
Informal reports of research work being done in the laboratory.
Staff and Graduate Students.

Classics

DEPARTMENT FACULTY

Claude W. Barlow, Ph.D., *Professor of Classics.* (on leave 1964-65)

UNDERGRADUATE PROGRAM

Undergraduate courses are provided for the acquisition of a reading knowledge of Greek and Latin and for the study of literary masterpieces in those original languages. Courses are also offered for the candidate who wishes to major in Latin. The major should include Latin 13 during the freshman year, three advanced Latin courses and three courses in related fields to be approved by the department. Other courses, given entirely in English, deal with phases of the Greek and Roman civilizations. Students who wish to elect Elementary Greek or Intermediate Latin should consult the department as far in advance as possible since these courses are not offered every year.

COURSES

Greek

11. Elementary Greek. Not offered, 1964-65.
Greek grammar through forms, syntax, vocabulary and reading; selections from Xenophon's *Anabasis* or other simple prose. Open to freshmen. Indivisible course. Mr. Barlow.

12. Attic Greek Prose; Homer's *Iliad*. Not offered, 1964-65.
Prerequisite: Greek 11.

13. Greek Drama. Not offered, 1964-65.
Prerequisite: Greek 12 or the equivalent.

123a. Greek Civilization. Not offered, 1964-65.
Lectures, readings and discussion on the history, literature, art, religion and government of ancient Greece, with emphasis on the elements which have contributed most to West-

ern civilization. For students who entered Clark before September, 1964, Greek 123a may be counted with Latin 123b to fulfill the general degree requirement in art and music (Group D) but not in fulfillment of the requirement in foreign language.

Latin

11. ELEMENTARY LATIN. Not offered, 1964-65.

12. INTERMEDIATE LATIN; VIRGIL'S *Aeneid*. Not offered, 1964-65.
This course will begin with an intensive review of forms, syntax and vocabulary for at least seven weeks. Prerequisite: two years of secondary school Latin. Offered in alternate years.

13. CATULLUS AND PLAUTUS; TERENCE AND HORACE. Not offered, 1964-65.
Prerequisite: Latin 12 or three years of secondary school Latin.

15. ROMAN HISTORIANS; POETS OF THE AUGUSTAN AGE. Not offered, 1964-65.
Prerequisite: Latin 13.

17. ROMAN PHILOSOPHERS, ROMAN SATIRE. Not offered, 1964-65.

19. SURVEY OF LATIN LITERATURE. Not offered, 1964-65.

123a. ROMAN CIVILIZATION. Not offered, 1964-65.
Lectures, readings and discussion on the history, literature, philosophy, art, religion, law and government of ancient Rome, with emphasis on the transmission of Greek civilization and the condition of the Roman Empire during the early years of Christianity. For students who entered Clark before September, 1964, Latin 123b may be counted with Greek 123a to fulfill the general degree requirement in art and music (Group D) but not in fulfillment of the requirement in foreign language. Given in English. Open to freshmen.

Comparative Literature

18. LITERATURE AND THE NATURE OF MAN.
The course is designed to serve the general student by providing him with an opportunity to investigate ideas held by outstanding literary artists of the Western World concerning the nature of man and his relation to the universe. The works are also to be studied as representatives of the cultures of which they are products. The course is planned not only to introduce the student to a body of knowledge and experience held in common by educated men and women in our society but also to help him to clarify his thinking concerning certain basic problems and to develop attitudes that are both humane and creative. The subject matter undertaken includes Sophocles' *Oedipus the King*, the *Book of Job*, the *Inferno* from Dante's *Divine Comedy*, Shakespeare's *King Lear*, Milton's *Paradise Lost*, Moliere's *Misanthrope*, Goethe's *Faust*, Part I, and selected poems of T. S. Eliot. All non-English works are read in translation. Meets the requirement for a third semester of English in addition to English 11 but not the requirement in Fine Arts. Classified as a Group C course. Open to sophomores, juniors and seniors with the consent of the instructors. Successful completion of the first semester is normally required for admission to the second semester. Mr. Anderson, Mr. King.

English 127a. Modern Continental Drama Not offered 1964-65.
A survey of the drama of continental Europe, excluding England, from Ibsen to the drama of the absurd. Special emphasis will be given to the major figures, including Ibsen, Strindberg, Chekhov, Pirandello and Brecht. Offered in alternate years. Mr. Schroeder.

English 145~~b~~a. Modern Continental Fiction.
Selected masterpieces by modern European novelists are studied closely in English translation, with attention to their philosophical, moral, social, political and psychological insights as well as to their literary forms. Writers considered include Flaubert, Turgenev, Tolstoy, Dostoyevsky, Gide, Proust, Mann, Kafka and Camus. Students are encouraged to read in the original languages when possible. Prerequisite: consent of the instructor. Mr. Beard

German 170a. The Faust Theme in Literature. Not offered 1964-65.
See description under German. Mr. Arndt.

German 172b. The German Contribution to World Literature. Not offered, 1964-65.
See description under German. Mr. Arndt.

Russian 180. Soviet Literature. (In English)
See description under Russian. Mrs. Quincy.

Economics and Sociology

DEPARTMENT FACULTY

Howard W. Nicholson, Ph.D., *Professor of Economics, Department Chairman*
James A. Maxwell, Ph.D., *Professor of Economics*
F. Eugene Melder, Ph.D., *Professor of Economics*
George E. Hargest, M.B.A., *Associate Professor of Economics and Business Administration*
Frederick W. Killian, LL.B., *Associate Professor of Sociology*
Philip G. Olson, Ph.D., *Associate Professor of Sociology*
Roger C. Van Tassel, Ph.D., *Associate Professor of Economics*
Donald Savage, M.A., *Assistant Professor of Economics*
Sang C. Suh, M.A., *Assistant Professor of Economics*
George A. Balko, Jr., M.B.A., *Assistant Professor of Economics and Business Administration*
Frederick E. Bamford, M.B.A., *Assistant Professor of Economics and Business Administration*
Rogers P. Johnson, M.A., *Lecturer in Sociology*

UNDERGRADUATE PROGRAM

The first aim of the department, in its undergraduate courses, is to give the student a comprehensive grasp of the underlying principles and functions of our economic and social institutions, and to develop habits of systematic and unbiased thought about these institutions. Some of the courses, however, contribute to the student's preparation for a business or professional career (Economics 13, 15, 22, 26, etc.) and are specifically recommended to students who are candidates for the degree of Bachelor of Science in Business Administration. Conversely, some students majoring in economics may be advised to elect certain courses in Business Administration which are credited toward the degree of Bachelor of Arts (Business Administration 100, 102, 120a, 121b, 150a, 160, 170b, 182b, 184, 252, 255b, 290).

Students who have an interest in Business Administration but prefer a program which is less intensive than that required of candidates for the degree of Bachelor of Science in Business Administration may enroll as candidates for the degree of Bachelor of Arts with a major in economics. Such students should take the normal college program. In the second year, they should elect Economics 11 and Business Administration 100. In the third and fourth years, they should select courses in economics and in business administration in consultation with their advisers.

Economics 11 is a prerequisite to all other courses in economics. Similarly, Sociology 11 is a prerequisite to other courses in sociology. Courses taken outside the department in partial fulfillment of the major requirement should be selected, subject to departmental approval, so as to provide a unified program centering about the student's major interest. Majors in economics will ordinarily be required to take Economics 105a, Intermediate Economic Theory. They are also encouraged to take Statistical Method 29a or Business Administration 160.

Candidates for departmental honors will engage in a program of independent study consisting of reading and research designed in part to give them specialized training in the fields of their major interest and in part to supplement formal courses. Ordinarily a candidate will begin his honors work in the second semester of the junior year by enrolling in the Honors Seminar.

Courses in sociology will be found listed, with descriptions, immediately after the list of courses in economics.

In making elections, students should bear in mind that some advanced courses are offered only in alternate years.

GRADUATE PROGRAM

The program for the degree of Master of Arts is worked out individually with each student.

For the degree of Doctor of Philosophy, which may be taken in Economics, each student must choose six fields of study to be agreed upon as early as possible in the first year of residence beyond the M.A. A range of courses is offered in cycles of two or three years. Individual work with instructors constitutes a considerable part of the program.

The classification of courses as undergraduate, intermediate, and graduate is an elastic one. Graduate students of economics should regard certain courses in business administration as part of the offerings of the Department of Economics and Sociology.

COURSES IN ECONOMICS

11. Principles of Economics.
Open to freshmen. Mr. Savage and Mr. Nicholson.

105a. Intermediate Economic Theory.
An analysis of contemporary price theory. Mr. Savage.

105b. National Income Analysis.
A study of contemporary income theory. Mr. Savage.

13a. Money and Banking. Mr. Maxwell.

140b. Consumer Economics. Not offered, 1964-65.
Theories of consumer choice making are analyzed. Rational planning and economy in important fields of consumers' decisions are explored. The role of government and private agencies in consumer education and protection are reviewed.

15a. Public Finance.
The principles of governmental expenditures, revenues, and debts, with particular reference to the United States. Mr. Maxwell.

Business Administration 100. Accounting.

Business Administration 102. Intermediate Accounting.

Business Administration 120a. Corporation Finance.

Business Administration 121b. Introduction to Investments.

Business Administration 150a. Marketing.

Business Administration 160. Business Statistics.

Business Administration 170b. Principles of Management.

Business Administration 182b. Personnel Management.

Business Administration 184. Management-Labor Relations.

200a. Economic Growth.
Analysis of economic growth theory, cultural, social and political factors making for growth. Factors within underdeveloped countries which hinder economic development will be examined. Mr. Suh.

200b. Problems in Economic Growth.
The course examines some economic and social theories pertinent to economic growth. It then considers policy problems in two areas: acceleration of development rates in poorer countries and maintenance of growth in richer countries. Class members make studies of topics related to growth problems. Mr. Suh.

201a. Economic Theory—Micro-Economics.
Analysis of consumer behavior; the theory of production; equilibrium of the firm and the industry; market structures, the pricing of factors of production; allocation of resources in a market economy; general equilibrium analysis; and introduction to welfare economics. Mr. Suh.

201b. Economic Theory—Macro-Economics. Not offered, 1964-65
Income and employment theory; the Keynesian aggregative system and post-Keynesian systems; static equilibrium theory; an introduction to macrodynamics. Prerequisite: consent of the instructor. Mr. Suh.

207a. International Trade Theory.
Emphasis is put on international value determination and the mechanisms for adjusting to international disequilibrium. Mr. Suh.

207b. International Economic Policy.
A review of the rise of the world trading economy, techniques of commercial policy, and major questions of international economic policy. Prerequisite: Economics 207a. Mr. Suh.

21a. BUSINESS CYCLES. Not offered, 1964-65.
Analysis of recurrent business fluctuations differentiating the typical business cycle and its phases. Treatment of the history, theories of causation and proposals for control of the business cycle.

210a. ECONOMIC AND SOCIAL REFORM. Not offered, 1964-65.
The development of economic institutions by society in its attempt to solve basic economic problems by free enterprise or planning. Attention is given to the contemporary industrial organization of the American economy.

211b. COMPARATIVE ECONOMIC SYSTEMS. Not offered, 1964-65.
An analysis of contemporary or recently industrialized economic systems such as capitalism, socialism, and fascism, followed by a consideration of these systems as currently or recently found to exist in specific nations.

213a. MONEY AND BANKING THEORY.
The process of money creation and money flows; an analysis of the monetary and banking system, money and capital markets, and the role of financial intermediaries; analysis of monetary policy instruments and their effectiveness; competing objectives of monetary policy; relation of these objectives to fiscal policy, debt management, and economic growth. Mr. Savage.

22a. LABOR ECONOMICS. Not offered, 1964-65.
A survey of the nature of labor economics and labor problems, including the several approaches of organized workers and employers to these problems.

22b. LABOR ECONOMICS. Not offered, 1964-65.
Applications of economic analysis to wages, unemployment, and related issues. The approach of government to labor force problems, including industrial relations and social insurance.

23b. PROBLEMS IN MONEY AND BANKING.
Central banks, particularly the Federal Reserve System; monetary standards; theories of foreign exchange; monetary policy in the United States. Prerequisite: Economics 13a or its equivalent. Mr. Savage.

231. ECONOMIC HISTORY OF THE UNITED STATES. Not offered, 1964-65.

24b. HISTORY OF ECONOMIC DOCTRINE.
After a quick survey of ancient writers, attention will be given to mercantilism and the doctrinal reaction from it as expressed by the Physiocrats and the Classical economists. Mr. Maxwell.

25b. PROBLEMS IN PUBLIC FINANCE.
The Employment Act of 1946 is discussed and methods by which it may be implemented. Other questions examined are: reform of the federal taxation, federal debt policy, the capital budget, federal budgetary procedure. Prerequisite: Economics 15a or its equivalent. Mr. Maxwell.

26a. INDUSTRIAL ORGANIZATION AND GOVERNMENT CONTROL.
Examination of the various forms of governmental regulation applied to our present industrial organization. Appraisal of existing governmental controls in specific industrial situations. Mr. Nicholson.

26b. Problems in Industrial Organization.
Problems of market organization, behavior, and public policy. Conducted on a seminar basis. Mr. Nicholson.

27a. Introduction to Mathematical Economics.
An introductory survey of the use of mathematical methods in economic analysis. Special attention is given to the mathematical framework of the theory of price determination. Some attention will be given to special topics such as game theory and linear programming. Prerequisite: Mathematics 12 and consent of the instructor. Mr. Nicholson.

28. Senior Honors. Staff.

280b. Senior Honors Seminar.
Designed to assist honors candidates in integration of the field. Prerequisite for honors. Staff.

29b. Statistical Method.
The nature of statistics; statistical description; statistical inference; special topics. Special emphasis will be given to theoretical and observed frequency distributions, elements of probability theory, problems of sample design and interpretation, decision theory, time series, index numbers, and measures of association and correlation. Mr. Nicholson.

Ordinarily required of all majors in Economics. With the approval of the Director of the Division of Business Administration, this half course may be substituted for B.A. 160, Business Statistics, by candidates for the degree of Bachelor of Science in Business Administration.

Business Administration 252. Marketing Research.

Business Administration 255b. Marketing Policies.

Business Administration 290. Analysis of Business Problems.

39a. Economic Theory.
Analysis of the theories of representative economists. Most attention is given to Marshall, Chamberlin, Keynes. Mr. Maxwell.

311. Seminar. Staff.

370b. Problems in Quantitative Economics.
Study of the application of mathematical and statistical techniques to economic problems. Mr. Nicholson.

300. Reading 30. Thesis	In Economic Growth.	Mr. Suh.
313. Reading 31. Thesis	In Money and Banking.	Mr. Maxwell.
322. Reading 32. Thesis	In Labor.	Mr. Melder.
324. Reading 33. Thesis	In Marketing.	Mr. Balko.
325. Reading 34. Thesis	In Public Finance and Fiscal Policy.	Mr. Maxwell.

326. Reading } In Business Organization and Government
35. Thesis } Control of Industry. Mr. Nicholson.

327. Reading }
36. Thesis } In International Economics. Mr. Suh.

329. Reading }
37. Thesis } In Statistical Methods. Mr. Nicholson.

334. Reading }
38. Thesis } In History of Economic Thought. Mr. Maxwell.

339. Reading }
320. Thesis } In Economic Theory. Mr. Maxwell.

Sociology

UNDERGRADUATE PROGRAM

An undergraduate major in sociology is designed to provide the student with an understanding of the intellectual tradition which has focused on description and explanation of human society, its structure, organization, and process. Emphasis is on both theoretical aspects of society in general and specifically the nature of American society. Requirements for a major in sociology consist of four courses in sociology, including Sociology 11 and 29, and three courses in related fields. Related fields are defined by the department and require departmental approval.

An honors program of independent study and research is available to qualified upperclassmen. Ordinarily a candidate will begin honors work in the second semester of the junior year by enrolling in Sociology 28.

GRADUATE PROGRAM

Graduate study leading to the Master of Arts degree is offered. The program emphasizes theory and research methods and the following substantive areas: Law and society, community and urban society. Field research as part of the thesis preparation is possible under the program of research conducted by members of the department.

COURSES IN SOCIOLOGY

F11a. Principles of Sociology.

An introduction to the basic concepts and theories of sociology and their application to an analysis of American society. Mr. Olson.

F11b. Social Institutions.

The major social institutions of the Western World—kinship, political-legal, religious, economic, educational, science as an institution, military, their development, control functions and their relation to the individual. Social change, structure and function and ideological factors. Prerequisite: Sociology 11a or consent of the instructor.

Mr. Killian.

12a. Human Evolution. Not offered, 1964-65.

The evolution of man as a biological organism and the development of man's distinguishing feature: culture. The assessment of paleontological and archaeological evidence in an attempt to reconstruct the evolution of man and his culture. The reconstruction of human culture from the stone age to the Christian era: emphasis placed largely on the Middle East, Egypt, Crete, Mesopotamia, and Europe. Mr. Olson.

12b. SOCIAL ANTHROPOLOGY.
An analysis of primitive society with emphasis on social structure, including religion, kinship and economics. The relation between culture and personality and the processes of social change in the primitative world are explored. Mr. Olson.

13a. INDIVIDUAL AND SOCIAL STRUCTURE.
An examination of the social contexts out of which personality types emerge; the development of the social mind and self; theories of interpersonal behavior and the presentation of self; the relation between individual behavior and social structures. An analysis of the role of history, society, and psychological factors in the development of personal identity and other components of the self, including anxiety, social personality, and character. The readings will emphasize both primitive society and the modern Western world. Prerequisite: Either Sociology 11, 12b, or Psychology 11. Mr. Olson.

15b. POLITICAL SOCIOLOGY.
An anthropological and sociological analysis of political institutions in the Western World. Emphasis on social change and social control. Prerequisite: Sociology 11 or consent of the instructor. Mr. Killian.

21a. SOCIOLOGICAL ANALYSIS.
The philosophical and logical premises underlying the collection and interpretation of empirical data and the extension of these to sociological contexts. A brief survey of the major styles of quantitative social investigation will be made: research design, survey analysis, logic of quantitative measurement techniques, and the questionnaire. Some time will be spent on community study and participant-observer techniques with an attempt to relate the qualitative data which come from these styles to quantitative data. Prerequisite: consent of the instructor. Mr. Olson.

23b. CRIME, LAW AND SOCIETY.
The behavioral phenomena of crime and delinquency in society; theories thereof; the nature and function of criminal law; juvenile delinquency and juvenile courts; criminal justice and the courts; treatment of deviant behavior of today; types of offenses and probable causation; sex offenses and insanity; outline of probation, parole and the prison world. The nature and limitations of legal control; penal codes and policy.

24b. THE COMMUNITY.
An analysis of community studies as the basis for understanding society, with particular reference to American society. The rise of central institutions and the transformation of community in twentieth century America: The links between community social structure and the total society. The historical decline of community and the emergence of pseudo-communities. The course will focus on a comparative analysis of the major American community studies. Prerequisite: Sociology 11. Mr. Olson.

25. LAW AND SOCIETY. Not offered, 1964-65.
First semester: Law, the social order, power and control. The basis of the legal order and legal institutions. Second semester: The problem situation, change and current legal

problems. Prerequisite: first semester must be taken in order to register for the second semester and consent of the instructor. Mr. Killian.

26b. Urban Culture. Not offered, 1964-65
The growth and development of urbanism in Western Civilization and its impact on civilization. An analysis of the complexities of urban life; the structural components and varieties of life styles found in American cities. The impact of urbanism on American society. Prerequisite: Sociology 11. Mr. Olson.

267b. Contemporary Sociological Issues.
For advanced undergraduate and graduate students. An advanced analysis of social theory. Prerequisite: consent of the instructor. Mr. Olson.

28. Honors and Special Readings. Staff.

29. Social Thought and Sociological Theory.
The development of man's thought about society; the philosophical basis of social thought and sociological theory; current sociological theory. Both semesters required for sociology majors. Prerequisite: Sociology 11, or consent of the instructor. Mr. Johnson.

38. Readings and Research in Sociology. Staff.

39. Thesis.

390. Thesis Seminar.

Education

DEPARTMENT FACULTY

Vernon Jones, Ph.D., *Professor of Educational Psychology, Department Chairman*
Henry C. Borger, Jr., Ph.D., *Professor of Education*
James M. Coffee, Ed.D., *Associate Professor of Education*
Joseph C. Bentley, Ph.D., *Assistant Professor of Education*
Ralph E. Packard, M.A., *Visiting Assistant Professor of Education*
Dayton D. Shepherd, A.M., *Lecturer in Education*
Theresa F. Cooney, M.Ed., *Lecturer in Education*
M. Evelyn Harriman, A.M. in Ed., *Lecturer in Education*

With the cooperation of Professor Warman of the Graduate School of Geography, Professor Beck of the Department of Philosophy, Professor Reid of the Department of Romance Languages, Miss Hughes, Dean of Women, and visiting lecturers in special areas.

UNDERGRADUATE PROGRAM

The department encourages all students who may be interested in preparing for teaching to consult with some member of its staff as early in their careers at the University as convenient. The actual election of courses in education, however, should be postponed until the junior year. During the first two years, students should complete as many of the specific requirements for the degree of Bachelor of Arts as possible, and lay a broad foundation of scholarship in the subjects in which they wish to teach.

In conformity with its policy of emphasizing the importance of scholarly background in the preparation of teachers, the department offers its courses as electives, and not as an undergraduate major. This means that the students preparing to teach should elect their majors with careful attention to extensive preparation in areas in which they wish to teach.

Education courses at the undergraduate level are offered primarily with two purposes in mind: (1) to provide introductory instruction to students who plan to teach in secondary schools and academies, and who, in preparation for such teaching, plan a fifth year of study leading to the degree of Master of Arts in Education; and (2) to provide an integrated program of courses and internship teaching to students who, immediately upon graduation, wish to teach in elementary schools.

For students desiring to enter elementary school teaching immediately upon receiving their undergraduate degree, a program has been evolved, in cooperation with the faculty, whereby the election of at least 18 semester hours in education may be possible, including internship teaching in the first semester of the senior year. Since the amount of professional work in education forms so large a percentage of the program of study of such students in the junior and senior years, it is obvious that careful planning must be done throughout the college course to have the desired number of electives available for work in education in these last two years.

GRADUATE PROGRAM

The graduate program in education consists of two parts: a program leading to the degree of Master of Arts in Education and a new program, established in 1962, leading to the degree of Doctor of Education.

Master of Arts in Education: For graduate students wishing to prepare for teaching and/or guidance in secondary or elementary schools and academies, the department offers a fifth-year program leading to the degree of Master of Arts in Education. The program includes additional work in the student's subject-matter field, courses and seminars in education and supervised internship teaching.

Admission Requirements: In addition to the general admission requirements to the Graduate School, a personal interview is usually required by the Department of Education. Since scholarships are usually not available for the first semester to students applying for the Master of Arts in Education as a terminal program, the department is liberal in its policy concerning the date when applications will be considered.

Programs Available: Four programs leading to the degree of Master of Arts in Education are available:

1. A full-time program for students with a bachelor's degree and strong academic background. Superior students may complete this program in one year. It includes appreciable advanced work in the academic field in which the student plans to teach, and internship teaching as well as graduate courses in education.
2. A program of part-time study for teachers in service.
3. A study-teach program for specially selected applicants involving alternate semesters of full-time study and paid employment as a teacher. This is a two-year program

and the teaching is a part of the requirements of all students in this study-teach plan.

4. A study-teach program in cooperation with the Department of Romance Languages, involving instruction in beginning college courses. This is a two-year program in which the student typically receives a Teaching Assistant Scholarship involving remission of tuition and a cash stipend. In this program 20 hours per week are required in supervised teaching in the Department of Romance Languages. In light of the extensive internship teaching experience in this program, the number of courses in education may be reduced to equal that in the subject matter field. The assisting or teaching is a part of the requirements of all students in T.A.S. Program. As part of the study of Romance languages and literature, the departments look with favor on study abroad for at least one summer, but this is not a requirement.

Course Requirements. The student is expected to elect one of the following groups of studies as the field in which he wishes to teach:

(a) Mathematics and natural sciences.
(b) History, geography, and government.
(c) Ancient and modern foreign languages.
(d) English, alone or in combination with some related subject.

Prior to receiving the degree, the candidate must have completed in undergraduate and graduate study combined not less than five year-courses in one of the above groups, or in a combination of groups approved by the Department of Education. At least two semester-courses in a subject-matter field must be taken as a part of the study in residence for the advanced degree and must be passed with a grade of B— or better for graduate credit. In addition to the above requirement in the subject-matter field, eight semester-courses of graduate work in education will normally be required. The program of courses to meet these requirements must be approved in advance by the department. Changes in the proportion of education and subject-matter courses may be made by the department on the basis of the candidate's previous training. Work, additional to the above requirements, either in the subject-matter field or in education, or both, may be required if this seems necessary for the adequate preparation of the candidate.

Internship Teaching. The department provides opportunities for internship teaching under supervision for all graduate students majoring in education. For graduate students of the department who have not had teaching experience, satisfactory work in internship teaching is a requirement for the degree of Master of Arts in Education.

Thesis or Additional Study in Lieu of Thesis. All candidates for the degree of Master of Arts in Education must choose one of the following plans:

(a) Prepare an acceptable thesis or special report.

(b) Elect, in lieu of thesis, two additional semester courses in subject-matter fields (making a total of at least four-semester courses in subject-matter area).

(c) Elect, in lieu of thesis, a double seminar in which intensive work will be required in preparing and presenting reports before fellow graduate students and the staff.

Final oral examination. The passing of a final oral examination will be required of all candidates.

Doctor of Education: The program for the degree of Doctor of Education was established in 1962 and is being organized and developed gradually, with special emphases on educational psychology, guidance and counseling. The requirements for this degree will closely parallel the requirements for the Doctor of Philosophy degree, as outlined in the catalog section on the Graduate School. Applicants for admission to the program will be expected to give evidence of high scholarly achievement, including results of the Graduate Record Examination. In special cases, foreign students may be excused from the Graduate Record Examination requirement.

COURSES

(Unless otherwise indicated, each sem. course in Educ. yields 1/2 course credi

201a. Educational Psychology: Child Growth and Development.
Principles of child development, with special emphasis upon maturation, learning and personality development in the elementary school years. Mr. Bentley.

207b. Use of Audio-Visual Materials in Teaching.
Principles and practices in the use of visual and auditory material and community resources in teaching. Laboratory work required and a fee of $8.00 charged for material.
Mr. Borger.

208a. Methods and Materials in Secondary Education.
Methods and techniques used by the teacher in junior and senior high school teaching, and a survey of materials available. Prerequisite: consent of the instructor. Mr. Borger.

210b. Psychological Approach to Citizenship Development.
A study and evaluation of the theoretical formulations and experimental evidence on the problem of values as they relate to character and citizenship development among children and adolescents. Attention will be given both to activities in the schools and to other institutions and agencies in the community as they relate to values and conduct of youth. Prerequisite: consent of the instructor. Mr. Jones.

215a. Internship Teaching in the Elementary School. (One-half course credit)
An extended period of observation and practice in teaching under supervision in regularly organized classes in elementary school. Each student is assigned to a supervising teacher, under whom he or she works for 180 hours during the semester. The first week of this period is normally devoted to observation; the remainder of the time to teaching, under supervision. Lesson planning, pupil evaluation, and supervision of pupils in nonclass activities are part of the requirements of each student.

Properly qualified students may elect a half-course seminar in conjunction with Education 215a upon permission of the department. Prerequisite: consent of the department.
(One half course credit) Mr. Jones, Mrs. Harriman, Mrs. Cooney, and Supervising Teachers.

20b. (Geography 200b.) Geography in Education.
Geography in the present-day American schools. The course is designed to meet the needs of those expecting to teach geography. Mr. Warman.

27b. Principles of School and Recreational Leadership. (Omitted, 1964-65).
The basic concepts and techniques of educational and recreational leadership. Lectures, readings, discussions, and field work. Permission of the instructor required for registration.
Miss Hughes.

DEPARTMENT OF ROMANCE LANGUAGES

TO Registrar's Office

FROM J. Richard Reid DATE 7 Sept 64

Re: course "The Teaching of Romance Languages"
(course ~~fmrx~~ exclusively for Departmental Interns
in Romance Languages)

1. This course should be numbered 271 this year, and not 270, as listed in the mimeographed schedule.

The arrange~~d~~ment worked out in the summer of 1962 was that it should receive the two numbers 270 and 271 in alternate years, because every student takes it for two years for credit. It does not involve duplication of course content, so that this is completely legitimate, and will avoid misunderstandings and difficult explanations later on.

Will you please make sure that the number 271 is used this year?

2. This course bears the departmental designation "Romance Languages" or "Education" according to the special circumstances of each student's program, since it is authorized to count in either field in both his degree program and for state teacher certification.

Each student will, in consultation with Dr. Jones, when his course program is approved for the Education Department, determine which designation should be used.

Please be careful to record it as so designated.

If there is any question about either of these points, please let me know.

263a. METHODS AND MATERIALS IN TEACHING OF LANGUAGE ARTS IN THE ELEMENTARY SCHOOL.
Methods and materials in the teaching of the language arts, in the middle grades, with special reference to reading. Particular emphasis will be given to provision for individual differences in teaching, and to the development of independent study skills. Field trips to selected schools will be arranged. Prerequisite: consent of the instructor. Mr. Shepherd.

260b. CURRICULUM DEVELOPMENT IN ELEMENTARY EDUCATION.
A study of the most essential materials and methods in elementary school instruction. Special attention will be given to the methods of teaching and learning in the social studies and mathematics, with brief units on the methods of cooperating most effectively with special teachers in the arts. Lectures and demonstrations by visiting specialists will be provided on particular topics, and field trips will be arranged for classroom demonstrations of certain principles and procedures. Prerequisite: consent of the instructor. Mr. Shepherd.

270. (ROMANCE LANGUAGES 270) THE TEACHING OF ROMANCE LANGUAGES. (Omitted in 1964-65)
A practicum course for Teaching Assistant Scholars serving as Interns in the Department of Romance Languages. This course will include a weekly lecture and readings, to provide a basis in the theory of applied linguistics; directed teaching in language courses; and a monthly seminar for discussion of the relations between theory and practice. Mr. Reid and Staff.

271 Teaching of Romance Languages (Offered 1964-65 + alternate years)

290b. PHILOSOPHY OF EDUCATION.
The aims, processes and materials of education with special reference to the influence of philosophical ideas on educational problems. Mr. Beck.

301a. EDUCATIONAL PSYCHOLOGY: ADOLESCENT GROWTH AND DEVELOPMENT.
Principles of learning and of personality development at the adolescent level. Major emphasis will be upon implications of normal adolescent growth and development for teaching and guidance. Mr. Jones.

303b. CURRICULUM DEVELOPMENT IN SECONDARY EDUCATION. Not offered, 1964-65
The basic objectives, issues, principles and procedures of curriculum organization and development in secondary schools, including the organization of learning experiences in reference to developmental and subject-matter sequences.
Mr. Borger and Visiting Specialists.

305a. EDUCATIONAL SOCIOLOGY.
A study of social phenomena and their relationships to education. Mr. Bentley.

305b. GROUP PROCESSES IN EDUCATION AND GUIDANCE. Not offered, 1964-65
Principles of group interactions as they relate to education. Influence of culture and society upon teaching and counseling will be considered. Mr. Packard.

307a. PERSONALITY DEVELOPMENT IN TEACHING AND COUNSELING.
The role of personality theory and development in counseling and education with emphasis upon those theories which relate to the counseling process. Mr. Bentley.

307b. SOCIAL BEHAVIOR AND THE DEVELOPMENT OF PERSONALITY.
Psychological, social and cultural bases of personality development as they relate to teaching and counseling. Mr. Packard.

EDUC.270 & 271 ARE ACCEPTED BY THE MASSACHUSETTS DEPARTMENT OF EDUCATION TOWARD CERTIFICATION AS A SECONDARY SCHOOL TEACHER FOR 4 SEM.HRS. IN EACH OF THE FOLLOWING AREAS:

SUPERVISED STUDENT TEACHING
METHODS & MATERIALS IN SECONDARY EDUCATION
ROMANCE LANGUAGES

THIS STATEMENT IS MADE IN ACCORDANCE WITH A LETTER OF SEPT. 11, 1962, SIGNED BY JOHN P. McGRAIL, DIRECTOR, DIVISION OF

309b. Social Learning in Relation to Teaching and Counseling.

The purpose of this course is to consider concepts of learning which contribute to an understanding of the development of social behavior. Principles of learning and teaching from the fields of social psychology and sociology will be studied within the context of the social environment. Mr. Coffee.

311a. Principles, Practices, and Organization of Guidance.

A survey of guidance and personnel work. Principles bearing upon guidance and student personnel practices will be developed. Aspects of related fields will be reviewed sufficiently to indicate the scope and content of guidance and personnel work. The problem of organizing and administering a guidance program will form an important part of this course. Mr. Coffee.

312a. Guidance: Counseling.

Emphasis in this course will be upon the theory and methodology of counseling and upon the management of typical counseling problems. The diagnosis and referral of behavior disorders and related personality maladjustments will be considered. Case material will be presented and analyzed. (311a must be taken simultaneously or have been taken previously.) Mr. Coffee.

312b. Guidance: Occupational Information and Placement.

The first part of this course will contain instruction and training in the use of occupational information in vocational guidance along with a consideration of the psychological and sociological factors related to occupational choice and job satisfaction. The second part will emphasize the organization of the placement service. ~~Mr. Coffee~~. Mr. Packard

314a. Tests and Evaluation.

The methods and problems involved in the evaluation of abilities, interests and achievement of children and youth. Attention will be given both to standardized instruments and to teacher-made tests of achievement. Mr. Jones.

314b. Tests and Evaluation: Advanced Problems.

The measurement and evaluation of aptitudes, attitudes, and personality with attention to the use of such measures in teaching and counseling. Mr. Jones.

315a. Internship Teaching in the Secondary School.

An extensive period of observation and teaching in the field or fields in which the student plans to teach in secondary school. Individual supervision is given by the department and by critic teachers in cooperating schools.

Properly qualified students may elect a half-course seminar in conjunction with Education 315a upon permission of the department. (One-half course credit.)

Mr. Jones, Mr. Bentley and Supervising Teachers.

318b. Individual Psychological Assessment in Guidance and Counseling.

Mr. Packard and Visiting Specialists.

319a. Statistical Methods in Educational Evaluation and Research I. Mr. Jones.

319b. Statistical Methods in Educational Evaluation and Research II. Mr. Jones.

322.b. Practicum in Guidance.

Offered in alternate years. Mr. Coffee.

ADDITIONAL COURSES, 1964–65

317B COUNSELING: ADVANCED PROBLEMS MR. PACKARD

326A ADVANCED PRACTICUM AND SEMINAR IN COUNSELING MR. COFFEE & VISITING LECTURERS

340A READINGS IN EDUCATIONAL PSYCHOLOGY MR. BENTLEY

325. ADVANCED PRACTICUM AND SEMINAR IN GUIDANCE AND COUNSELING.
Offered in alternate years. Mr. Coffee and Visiting Specialists.

350. RESEARCH IN EDUCATION.
Individual direction of students in their research projects. Staff.

380b. DEPARTMENTAL SEMINAR ON CURRENT PROBLEMS. Staff and Graduate Students.

English

DEPARTMENT FACULTY

Karl O. E. Anderson, Ph.D., *Professor of English, Department Chairman*
James F. Beard, Jr., Ph.D., *Professor of English*
Charles S. Blinderman, Ph.D., *Associate Professor of English*
William H. Carter, Jr., Ph.D., *Associate Professor of English*
Stanley Sultan, Ph.D., *Associate Professor of English*
Jessie C. Cunningham, A.M., *Assistant Professor of English*
Neil R. Schroeder, Ph.D., *Assistant Professor of English*
Serena S. Hilsinger, Ph.D., *Instructor in English*
Arthur Martin, A.B., *Instructor in English* Loretta Denner, Lecturer in English 1st sem.
Joseph R. Hilyard, Lecturer in English, 2nd Sem.

UNDERGRADUATE PROGRAM

All freshmen must take English 11 except those exempted from one or both semesters on the basis of the College Entrance Examination Board Advanced Placement Test or the Special Placement Test given by the Department of English. The requirement of a third semester of English may be satisfied by any English course beyond English 11 with the exception of English 12a and 19b.

A major in English consists of a minimum of four English courses beyond English 11 and three related courses, as follows:

1. English 13a and either English 14 or 15. Normally these courses should be taken in the sophomore year.
2. English 150b and three other half-courses in English from a group of courses open only to juniors and seniors, namely: 101b, 104, 105, 110, 113, 117, 122b, 130a, 146b and 155b.
3. Related courses: 2 semesters in history, to be selected from the following courses: History 10, History 12b, History 22b, and History 230; one year in philosophy, preferably Philosophy 12; and one other course approved by the department, preferable from the following list: Fine Arts 11, Linguistics 115, French 113, German 141, Greek 123a, History 12, History 230, Latin 123b, Music 12, and Philosophy 19b.

The Honors Program in English, which offers an opportunity for extensive independent work during the junior and senior years, is open to qualified students upon application to the department.

Students who expect to do graduate work in English are strongly advised to acquire a reading knowledge of French, German and Latin.

COURSES

11. COMPOSITION AND LITERATURE.
English 11 aims (1) to improve the student's composition through a review of the principles of good writing, frequent themes, and individual conferences and (2) to enable him,

through the techniques of close reading, to comprehend and enjoy literature. Open to freshmen.
Staff.

12b. SPEECH.

A fundamental course in speech, including training and practice in voice production, diction, articulation, and the basic types of speech. Drill sessions and recordings help the student recognize and correct his speech deficiencies. Practice in public speaking includes practical experience in the most common types of speeches. Open to freshmen. Prerequisite: consent of the instructor.
Mr. Schroeder.

13a. INTRODUCTION TO POETRY.

A course introducing the student to a variety of critical approaches to poetry and affording extensive experience in reading, discussing and writing about individual poems. Attention is given to as many as possible of the chief kinds, functions and values of poetry.
Mr. Carter.

14. ENGLISH NOVEL.

A study of the English novel from its beginning to the end of the nineteenth century. The first semester includes Defoe, Richardson, Fielding, Smollett, Sterne, Jane Austen, and three or four minor novelists. The second semester considers Scott, Thackeray, Dickens, George Eliot, Hardy, Conrad, and three or four minor novelists. Some emphasis is placed on the development of the novel as a literary form.
First semester: Mr. Carter.
Second semester: Mrs. Hilsinger.

15. ENGLISH DRAMA.

A course in theatrical techniques and the literature of the major periods of drama in the English language. The first semester covers the religious drama of the Middle Ages and the drama of Tudor, Stuart, and Restoration England, including plays by Marlowe, Shakespeare, Jonson, Beaumont and Fletcher, Dryden, Congreve and Wycherley. The second semester covers eighteenth and nineteenth century English drama and the modern drama of England, Ireland and the United States. Included are plays by Sheridan, Goldsmith, Wilde, Shaw, Synge, Yeats, O'Casey and O'Neill.
First semester: Mr. Schroeder.
Second semester: Mr. Sultan.

16a. CREATIVE WRITING.

A course designed to cultivate and guide student work in the short story, the lyric poem, and the informal essay. Class meetings deal largely with important aspects of the art of fiction; published literary works and student manuscripts are discussed. Prerequisite: a one-semester course in literature, which may be taken concurrently.
Mr. Sultan.

16b. CREATIVE WRITING.

Open to students who have taken English 16a and to other students who are interested in writing verse.
Mr. Sultan.

19b. INTERMEDIATE COMPOSITION.

This course is designed to help students improve their expository writing through the study and application of rhetorical methods. Diction, sentence structure, paragraph integrity, theme organization, logic, semantics, persuasion, the relationship of idea to expression and of expression to audience are among the matters analyzed.
Mr. Blinderman.

101b. CHAUCER.

After a careful study of the Prologue to the *Canterbury Tales* to acquaint the student with the essentials of Middle English vocabulary, grammar and scansion, most of the *Canterbury Tales* and all of *Troilus and Cressida* are read more rapidly. The emphasis throughout is on Chaucer's literary skill and breadth of vision. Offered in alternate years. Mr. Anderson.

104. MILTON AND THE SEVENTEENTH CENTURY. Not offered, 1964-65.

The first semester is devoted to a study of seventeenth century English literature exclusive of Milton and the Restoration Drama; that is, metaphysical poets (Donne, Herbert, Vaughan); the seventeenth century lyric (Jonson, Herrick, Crashaw, Marvell); prose works by Bacon, Burton, Browne, Walton, Bunyan, Pepys and Evelyn; and in general, the rise of neo-classicism (Jonson, Hobbes, Dryden). The second semester considers in some detail the works of Milton and the Restoration Drama (Dryden, Etherege, Wycherley, Congreve, Farquhar). Offered in alternate years. Mr. Carter.

105. EIGHTEENTH CENTURY.

During the first semester, prose works such as Defoe's *Moll Flanders* and Swift's *Gulliver's Travels,* plays such as Gay's *Beggar's Opera* and Lillo's *London Merchant,* and the major poems of Pope and Swift are considered. During the second semester, prose works by Boswell and Johnson; novels by Richardson, Fielding, Smollet, Sterne; plays by Fielding, Goldsmith, Sheridan; and poetry by Thomson, Collins, Gray, Burns and Blake are studied. Offered in alternate years. Mr. Carter.

110. VICTORIAN LITERATURE. Not offered, 1964-65.

A survey of Victorian literature through the major movements and figures of the age. In the first semester, Carlyle, Macauley, Mill and Newman are studied as representative spokesmen of prevailing ideological movements, such as Transcendentalism, Utilitarianism, Anglo-Catholicism; Tennyson and Browning are the major poets studied. In the second semester, the movements include Darwinism, Aestheticism and Imperialism; Huxley, Arnold, Pater, Ruskin, Wilde and Hardy are among the authors read. Offered in alternate years. Mr. Blinderman.

111. AMERICAN LITERATURE.

Through study of representative masterworks, the course traces the main currents of American literature from Puritan times to the present. Authors read during the first semester include Sewall, Edwards, Franklin, Cooper, Poe, Hawthorne, Thoreau, Emerson, Melville and Whitman; during the second semester, Twain, Howells, Dickinson, Adams, Crane, James, Frost, Eliot, Faulkner and Hemingway. Mr. Beard.

113. SHAKESPEARE.

Approximately twenty plays, with supplementary critical essays, are read through the year as a basis for a study of Shakespeare's development as a dramatist and his changing attitude toward life. The second semester is devoted mainly to a careful analysis of *Hamlet, Othello, Lear, Macbeth* and *Antony and Cleopatra.* Mr. Anderson.

117a. LITERATURE OF THE ROMANTIC PERIOD.

The course includes reading of prose works (essays and a gothic novel), study of eighteenth century predecessors of the Romantic Movement, and exposure to background

information; emphasis is placed upon the major poetry of the major Romantic poets: Blake, Coleridge, Wordsworth, Byron, Shelley, and Keats. Offered in alternate years.
Mr. Blinderman.

122b. MODERN POETRY.
A course in English poetry during the forty-year period from the First World War to the death of Dylan Thomas and Wallace Stevens, with brief consideration of the precursors of the period. Yeats, Pound, Eliot, Auden, Frost, Stevens and Thomas are the principal poets studied. Offered in alternate years. Mr. Sultan.

127a. MODERN CONTINENTAL DRAMA. Not offered, 1964-65.
See description under Comparative Literature. Mr. Schroeder.

128. THEATRE IN WESTERN CIVILIZATION.
A history of Western theatre from classical Greece to the present which includes a study of the origins of the theatre, the origin and development of the major theatrical genres (drama, mime, ballet, opera, etc.), the emergence of the national theatre of Western civilization, the history of theatrical methods and techniques (acting, theatre architecture, scene design, production methods, etc.), and the aesthetic, historical, philosophical, and sociological significance of theatre through the ages. The first semester will be a study of Western theatre through the Renaissance; the second semester will cover theatre from the late seventeenth century to the present. Offered at the discretion of the department. Mr. Schroeder.

130b. ENGLISH SEMINAR: Dickens (1964-65) Mr. Blinderman
This seminar is devoted to the intensive study of a special subject or a small group of writers. It is limited to advanced students who are capable of independent work. Prerequisite: consent of the instructor.

Topic for 1964-65: Dickens. The reading of Dickens' novels and of secondary materials will be the occasion for a consideration of such topics as the craft of novel-writing; the novel as vehicle for humor, for social reform, for symbolic expression; the impact of the age upon the novel; the relevance of biographical data; and the value of literary criticism. Mr. Blinderman.

143a. MODERN BRITISH FICTION. Not offered, 1964-65.
The course deals primarily with the work of the four major British writers of fiction during the twentieth century: Conrad, Lawrence, Woolf and Joyce. Offered in alternate years. Mr. Sultan.

144b. CONTEMPORARY AMERICAN FICTION. Not offered, 1964-65.
A critical introduction to the best American fiction since about 1900, with emphasis on its aesthetic values, sociological insights, and philosophical implications. Authors read include Dreiser, James, Anderson, Fitzgerald, Hemingway, Wolfe, Faulkner and Mailer. Offered in alternate years. Mr. Beard.

145a. MODERN CONTINENTAL FICTION.
See description under Comparative Literature. Mr. Beard.

146b. INTRODUCTION TO LITERARY CRITICISM. Not offered, 1964-65.
This course involves the discussion of a selection of critics, from Aristotle to the present, who have been particularly influential in English and American literature. Offered at the discretion of the department. Mr. Carter.

125. INDEPENDENT STUDY IN ENGLISH STAFF (Mr. Sultan, 2nd sem. 1964-65)

150b. Senior Survey.
This seminar seeks to help the senior major integrate his other English courses and to fill in any significant gaps in his English program. The reports and discussions trace, from early writing to the present, such concepts as Classicism, Romanticism, Realism and Naturalism, Tragedy, Comedy, Satire and Humanism. Required of departmental majors. Mr. Anderson.

155b. Junior Honors Seminar.
Restricted to juniors who are candidates for honors in English. The purpose of the seminar is to prepare the student for the advanced independent study of literature. It comprises such subjects as the definition of genres, the nature of metaphor, alternative critical approaches to literature and the editing of texts. Mr. Beard.

Fine Arts

DEPARTMENT FACULTY

Samuel P. Cowardin, Ph.D., *Associate Professor of Fine Arts*
Sante Graziani, M.F.A., *Associate Professor (affiliate) of Fine Arts*

UNDERGRADUATE PROGRAM

The major in fine arts if offered jointly by Clark University and the School of the Worcester Art Museum. The program consists of thirteen courses (including Fine Arts 11) taken at Clark and seven courses at the museum school.

Every candidate for admission who wishes to major in fine arts must submit with his application form a portfolio of about a dozen pieces of representative work in drawing, painting, design, etc. Each piece should be clearly marked with the candidate's name and home address.

COURSES

11. Introduction to Western Art.
Lectures during the first four weeks deal with general topics, such as design principles and technical procedures. The remainder of the course treats significant works of architecture, sculpture and painting in the light of their times. First semester prerequisite to the second. Mr. Cowardin.

111. Basic Drawing and Painting.
Introduction to the drawing and painting of objects in the field of vision; theory and practice in the statement of line, form and light and shade; study of the nature and use of materials and instruments; exercises from objects and from living models; observation of method and accomplishment found in the museum's collections. Nine hours of studio work a week at the museum school. Indivisible course. Mr. Graziani and Staff.

12b. Survey of Western Painting.
General problems of pictorial expression are treated as well as the historical aspects of style. May not be counted in addition to Fine Arts 11. Mr. Cowardin.

14a. Introduction to the Visual Arts.
Each of the visual arts is treated in a non-historical way, with special regard for the physical nature of the medium and its expressive potential. May not be counted in addition to Fine Arts 11. Mr. Cowardin.

15. Art of the Renaissance in Italy.
Prerequisite: at least one semester course in fine arts. Mr. Cowardin.

191a. ART OF THE ANCIENT NEAR EAST AND INDIA. Not offered, 1964-65.
Mr. Cowardin.

192a. ART OF CHINA AND JAPAN. Not offered, 1964-65.
Mr. Cowardin.

199. ADVANCED PAINTING AND DESIGN.
General designation for all courses at the museum school above the elementary level. Ordinarily open only to majors in the practice of art. Staff of the Museum School.

Freshman Orientation Course

ORIENTATION. A non-credit course for freshmen. Two periods a week through October.
Not offered, 1964-65 Coordinators, Dean Borger and Dean Hughes.

Geography

DEPARTMENT FACULTY

Raymond E. Murphy, Ph.D., *Professor of Economic Geography, Director of Graduate School of Geography*
Henry J. Warman, Ph.D., *Professor of Geography*
Martyn J. Bowden, M.A., *Assistant Professor of Geography*
Robert W. Kates, Ph.D., *Assistant Professor of Geography*
Rodman B. Snead, Ph.D., *Assistant Professor of Geography*
Guy H. Burnham, A.M., *Instructor in Geography*
Carolyn J. Ryan, Ph.D., *Assistant Editor of Economic Geography and Lecturer in Geography*

When the Graduate School of Geography was organized in 1921, Clark became the second university in the United States to establish a separate graduate program in geography. At the present time, advanced training is provided leading to the Master's and Doctor's degrees. In addition, the Staff offers a series of courses for undergraduates within the liberal program of Clark University.

UNDERGRADUATE PROGRAM

Majors in geography are required to take seven year-courses, or the equivalent, in geography and related fields. At least four, and not more than five, of these courses must be in geography.

Geography 10, Elements of Geography, is usually taken in the freshman year, or as early as possible after the selection of geography as a major. One or two of the following courses may be taken during the sophomore year: Geography 150b, Geography 160, Geography 191. Juniors and seniors are eligible for 200-level courses.

Subjects in Group A (Science and Mathematics) strongly recommended by the staff are mathematics, geology and biology. Recommended fields listed under Group B (Social Science) include history, economics, international relations, sociology and anthropology.

An Honors Program in geography offers opportunity for independent study and research. Information regarding the program can be obtained from the departmental office.

THE GRADUATE SCHOOL OF GEOGRAPHY

Master of Arts: In order to enter the M.A. program without condition, a student must give evidence of some background in the elements of geography, in economic geography and in cartography. Courses taken to remedy any deficiencies will not count as part of the regular M.A. program.

A first-year student is required to take Geography 360, Geography 214 or Geography 220, and one seminar. He must elect enough additional graduate courses to make a total of five, of which one each semester may be a regional course. In the second semester, if he has no deficiencies, he may elect a single or a double thesis course.

Oral examinations for the master's degree cover four fields (three systematic and one regional) approved by the staff. By April 15 of the year in which the candidate expects to receive his degree, he must submit an acceptable draft of the thesis to his adviser; this will then be circulated among the staff members for approval. After all revisions have been made and the draft approved by the adviser, the thesis is typed in final form. University requirements concerning the thesis can be found in the section on the Graduate School.

Doctor of Philosophy: Normally, to enter the Ph.D. program, a student must have completed all requirements for a master's degree in geography at Clark or at another institution. A student otherwise qualified for doctoral work who does not have a graduate degree in geography should consult the director of the Graduate School of Geography. A student who began his graduate work at Clark may enter the final resident year for the Ph.D. only upon written request and written acceptance by the director. Further details are available from the departmental office.

A doctoral candidate normally elects four courses each semester. If he lacks background in geomorphology or climatology he must take courses in the fields in which he is deficient. As part of his doctoral program he must take at least two seminars. He must pass an examination in French, German, Russian or Spanish, preferably in his first year at Clark. The department may set an additional language or other requirement as the student's field of research may demand. The language and alternative requirements must be fulfilled before the preliminary examination is scheduled.

The candidate offers five fields in his preliminary examination. The major is the field in which the student expects to write his dissertation. One of the four minor fields must be a region. One of the minor fields is to be written, at a time specified by the staff; the remainder of the examination is oral. In addition a short period will be devoted to a discussion of the candidate's dissertation plans.

By March 15 of the year in which the candidate expects to receive his degree he must submit an acceptable dissertation draft to his major professor. If this is approved, it will be circulated among other staff members for their comments and a date set for its defense. If the defense is adequate, and after any necessary revisions have been approved by the major professor, the dissertation is typed in final form. The original and a carbon copy must be delivered to the departmental office at least four weeks before the date of commencement. All dissertations are microfilmed and, for this reason, it is required that illustrations be in black and white, in no case requiring more than a page.

Distinctive Features and Specialization

The Clark Graduate School of Geography has the substantial advantage of being centrally situated within New England, a region of varied rural and urban landscapes and renowned cultural centers.

The School has become a traditional "port of call" for professors of geography from this and other countries, and the graduate students have opportunities to visit with them as well as to attend the lectures which are arranged.

Graduate students are assigned desks and shelves in the Geography Workroom. The Workroom and other sections of the Geography Building contain specialized equipment and research facilities for the use of students and staff. The Libbey Library of the Geography Building serves for general conferences and the reception of visiting lecturers. Workroom and classroom fees, totaling $10 per semester, are payable on November 1 and March 1.

A feature of the Graduate School of Geography is the two-week field camp program at the beginning of the fall term. The program includes studies of land utilization, geomorphology, meteorology, resources and urban geography, with special training in mapping and other field techniques.

Graduate course work normally begins on the Monday after the close of field camp. A reading period begins about May 1 each year, allowing students time to coordinate their work prior to the oral examinations.

Publications: A professional magazine, *Economic Geography,* is edited by a staff member. Started at Clark University in 1925, it is the only journal published in English that specializes in economic and urban geography. The magazine has a world-wide distribution, with a total circulation of 3,000.

The graduate students, through the years, have maintained the Clark University Geographical Society. It publishes *The Monadnock,* a booklet which keeps geography alumni in touch with each other and with current activities in the school.

COURSES

10. Elements of Geography.
Physical and cultural phases of geography and application of some principles of geography to selected regions. Open to freshmen and sophomores. Juniors and seniors admitted only by consent of the instructor. Indivisible course. Mr. Warman.

150b. Management and Conservation of Resources.
An introduction to natural resource problems in an era of rising population pressure. Prerequisite: Geography 10 and Economics 11 or equivalent. Mr. Kates.

160b. Economic Geography.
An introductory study of the major areal differences in both kind and level of economic activity. Prerequisite: Geography 10 or Economics 11, or equivalent. Miss Ryan.

191. Cartography and Graphics.
Preparation of maps, graphs, charts. Restricted to twenty. (See instructor). Mr. Burnham.

200b. Geography in Education.
Geography in the present-day school system; designed to meet needs of those teaching or expecting to teach geography as a separate subject or in the social studies. Mr. Warman.

201. Political Geography. Not offered, 1964-65.
Major political problems of the world as related to geographic factors and applied to selected regions.

202. Honors.
Independent study, reading and research. Open only to honors undergraduates. Staff.

214a. Principles of Geomorphology.
The analysis and distribution of physical features in the geographic landscape. Field trips required, with field trip fee. Prerequisite: Geography 10 or Geology 12, or equivalent. Mr. Snead.

214b. Regional Physiography.
The regional interpretation of major land forms of North America and their interrelationships with climate, vegetation and soils. Field trips required, with field trip fee. Prerequisite: Geography 214a or equivalent. Mr. Snead.

220a. Elements of Physical Climatology.
A survey of the elements of climate, atmospheric circulation and the exchange of heat and moisture between the earth and its atmosphere. Prerequisite: Geography 10 or consent of the instructor. Mr. Snead.

220b. Regional Climatology.
World classification and description of climates. The various classifications of climate especially as related to vegetation. Prerequisite: Geography 220a or consent of the instructor. Mr. Snead.

245a. Introduction to Quantitative Methods in Geography.
Elementary statistical methods for geographers. Prerequisite: consent of the instructor. Mr. Kates.

272. Cultural Geography.
An historical approach to the study of man's transformation and use of the earth. Mr. Bowden.

282a. Geography of Anglo-America. Mr. Warman.

283a. Geography of Middle America. Not offered 1964-65. Mr. Warman.

283b. Geography of South America. Mr. Warman.

285b. Geography of Europe. Mr. Bowden.

286a. Geography of Southern Asia. Not offered, 1964-65.

287b. Geography of the Soviet Union. Not offered, 1964-65.

291. Advanced Cartography. Mr. Burnham.

310b. Principles of Geomorphology. Not offered, 1964-65.

340. Rural Land Use.
A study of the factors associated with the spatial differentiation of rural land uses. Particular attention will be given to the use of land for agriculture and to relevant methods of area research.

347b. Quantitative Methods in Geographic Research.
Application of quantitative methods to current geographic research. Prerequisite: Geography 245a or equivalent. Mr. Kates.

350. Problems of Resource Management.
Appraisal of methods of estimation, projection and allocation of resource availability and needs. Mr. Kates.

215B PROBLEMS IN GEOMORPHOLOGY MR. SNEAD

360. Problems in Economic Geography.
Various research fields, research methods, and detailed techniques in economic geography. Mr. Murphy.

361. Urban Geography.
The modern city from the geographic viewpoint, with emphasis on the American city. Mr. Murphy.

370a. Human and Cultural Geography. Mr. ~~Warman~~ Snead.

390a. Air Photo Interpretation. Mr. Snead.

399a. Field Methods and Studies.
Two weeks in Fall. Fee required. One field camp required of each graduate student. Staff.

SEMINARS

315b. Seminar in Geomorphology. Mr. Snead.

355a. Seminar on Resources. Mr. Kates.

365b. Seminar in Economic Geography. Not offered, 1964-65. Mr. Murphy.

366a. Seminar in Urban Geography. Not offered, 1964-65.

375a. Seminar in Cultural Geography. Mr. Warman.

380a. Seminar in Philosophy of Geography. Not offered, 1964-65.

381a. Seminar on Themes in Geographic Thought. Mr. Bowden.

READING, RESEARCH AND THESIS COURSES

300. Reading Course.
Prerequisite: consent of the instructor.

301. Research in Geography.
Prerequisite: consent of the instructor.

302. Thesis Research.
Single or double course. Prerequisite: consent of the staff.

Geology

DEPARTMENT FACULTY

Wesley E. Bryers, Ph.D., *Assistant Professor of Geology*

UNDERGRADUATE PROGRAM

The department offers an undergraduate major, commencing in September, 1964. The program is offered with the cooperation of Dr. Snead of the University's Graduate School of Geography and Joseph R. Sage of the Civil Engineering Department of Worcester Polytechnic Institute.

Majors in geology are required to take seven year-courses or their equivalent in half-year courses. At least four and one-half of these courses must be in geology or geomorphology. Attendance at an approved summer field camp is required of majors and counts as a half- to full-year course in geology.

Related fields which may be used toward supplementing the requirements for the major are civil engineering, biology, chemistry, mathematics, physics, and cartography.

Courses chosen from these fields are based upon the student's desire to fulfill the general requirements for graduate work. They are *not* required by the department for an undergraduate major except where they relate to the general requirements of the university.

COURSES

11. General Geology.

Introduction to geology, origin of the earth, its development through time and the succession of plant and animal life. First semester deals with common rocks, their structure, origin and occurrence; geological activities of the air, streams and sea; nature of glaciers, volcanoes and earthquakes, and age of the earth. Laboratory work consists of rock and mineral identification and map interpretation. Second semester deals with the origin of continents and ocean basins, their development through time; the geologic history of North America; and evolution of life through geologic time. Laboratory work consists of geologic map interpretation and fossil identification. Occasional field trips. Indivisible course. Open to freshmen. Laboratory fee. Mr. Bryers and Assistants.

111a. Introductory Mineralogy. Not offered, 1964-65.

Study of crystallographic, physical and chemical properties of common minerals. Field trips. Mr. Bryers.

122. Economic Geology. Not offered, 1964-65.

Introductory survey of the origin and structural relations of the important metallic and non-metallic mineral deposits. Techniques of exploration and mining will be reviewed. Field trip. Mr. Bryers.

131b. Structural Geology.

Analysis of rock deformation based on the principles of mechanics and the utilization of research data obtained from laboratory and field investigations. The principles of structural geology will be applied to the interpretation of major fold, fault and fracture systems of the earth. Field trips. Mr. Bryers.

141a. The Fossil Record.

A systematic survey of the morphology, taxonomy and geologic history of groups of organisms commonly found as fossils. The techniques and principles used for interpreting the fossil communities in terms of age and environment will be discussed. Field trips. Mr. Bryers.

Summer Field Camp in Geology.

Required of geology majors and should be taken at the end of the sophomore or junior year at a field camp approved by the department. (½-1 course credit).

Geography: course descriptions are under the section, "Geography."

214a. Principles of Geomorphology. Mr. Snead.

214b. Regional Physiography. Mr. Snead.

220a. Elements of Physical Climatology. Mr. Snead.

220b. Regional Climatology. Mr. Snead.

Civil Engineering: course descriptions are in the section under "Department of Civil Engineering" in the catalog of Worcester Polytechnic Institute.

CE. 540. ENGINEERING GEOLOGY. Mr. Sage.

CE. 541. SEDIMENTATION AND STRATIGRAPHY. Not offered, 1964-65.
Mr. Sage.

German

DEPARTMENT FACULTY

Karl J. R. Arndt, Ph.D., *Professor of German, Department Chairman*
James S. Edwards, A.M., *Associate Professor of German*
Guy T. Hollyday, Ph.D., *Assistant Professor of German*
Erika T. Theobald, Ph.D., *Assistant Professor of German*

UNDERGRADUATE PROGRAM

The Department of German intends primarily to give its students a liberal and humanistic education by presenting and interpreting the language, life, and literature of German-speaking peoples. Students interested in German as their major should consult the department chairman.

COURSES

11. INTRODUCTORY GERMAN.
A comprehensive introduction to the written as well as the spoken language. The course aims at acquisition of all four skills: reading, writing, speaking and understanding. The language laboratory will be used to assist in reaching these goals. Laboratory fee. Indivisible course. Mr. Hollyday and Mrs. Theobald.

12. INTERMEDIATE GERMAN.
Review of German grammar. Study of expository and narrative prose. Aural and oral training will be continued with the assistance of the language laboratory. Laboratory fee. Prerequisite: German 11 or advanced placement. Indivisible course.
Mr. Edwards and Mr. Hollyday.

14. INTERMEDIATE ORAL AND WRITTEN GERMAN.
Principally for students who decide to major in German but have no preparatory school training in the language. Does not complete requirement in German. Intensive aural-oral drill, assisted by the language laboratory. Prerequisite: B+ in German 11.
Mrs. Theobald.

130. INTRODUCTION TO GERMAN CLASSICISM.
Reading and interpretation of works of Lessing, Goethe, and Schiller. Prerequisite: German 12 or advanced placement. Laboratory fee. Mrs. Theobald.

132. ADVANCED ORAL AND WRITTEN GERMAN. Not offered, 1964-65.
Intensive training in the aural, oral, and written use of the language in preparation for teaching and government service. Required of majors. Prerequisite: oral and written examination.

134. RECENT GERMAN LITERATURE.
Reading and interpretation of recent German dramatic and narrative works. Prerequisite: German 12 or advanced placement. Mr. Edwards and Mr. Hollyday.

141. GERMANIC CIVILIZATION.
Illustrated lecture course on the literature, history and fine arts of German lands from the Holy Roman Empire to the present day, with emphasis on the Reformation, Age of Enlightenment and the Classical Period. Given in English. Meets the fine arts requirement for students admitted before September, 1964. Mr. Edwards

154. HISTORY OF GERMAN LITERATURE. Not offered, 1964-65.
Survey of German literature from earliest times to the present. Course replaces German 152 and 153. Given in German. Prerequisite: German 132 or consent of the instructor. Mr. Arndt.

161a. GERMAN LYRIC POETRY. Not offered, 1964-65.
German lyric poetry from Klopstock to the present. Given in German. Prerequisite: German 132 or consent of the instructor. Mr. Arndt.

162a. FAUST.
Reading and discussion of Goethe's *Faust I* and *II*. Given in German. Prerequisite: German 132 or consent of the instructor. Mr. Arndt.

164a. THE GERMAN NOVEL OF SELF-DEVELOPMENT. Not offered, 1964-65.
A study of the German *Entwicklungsroman,* starting with von Eschenbach's *Parzival,* in modern German. Given in German. Prerequisite: German 132 or consent of the instructor. Mr. Arndt.

165a. FROM EXPRESSIONISM TO CATASTROPHE.
German literature from World War I to World War II. Given in German. Prerequisite: German 132 or consent of the instructor. Mr. Arndt.

166. GERMAN DRAMA SINCE KLEIST. Not offered, 1964-65.
Given in German. Mr. Edwards.

170a. THE FAUST THEME IN LITERATURE. Not offered, 1964-65.
A study of the fortunes of Faust and the Faustian spirit as treated in European and American literature from the Reformation to Hiroshima. Given in English. Prerequisite: consent of the instructor. Mr. Arndt.

172b. THE GERMAN CONTRIBUTION TO WORLD LITERATURE. Not offered, 1964-65.
Goethe in 1827: "The epoch of world literature is here and everyone must now work to hasten the development of this epoch." This course will study such translated works of German literature which contribute most to the understanding of Germany and her place in the Western world. Reading, analysis and discussion of translated works from various periods of German literature, starting with the *Song of the Nibelungs* and ending with representative works of the currently dominant "Group 1947." Given in English. Prerequisite: consent of the instructor. Mr. Arndt.

198. SEMINAR.
Principally for majors but open to other qualified upperclassmen. Research into selected areas of German literature. Prerequisite: consent of the instructor. Mr. Arndt.

History, Government and International Relations

DEPARTMENT FACULTY

Sherman S. Hayden, Ph.D., *Professor of International Relations, Department Chairman*
Robert F. Campbell, Ph.D., *Professor of American History*
H. Donaldson Jordan, Ph.D., *Professor of English History*
Dwight E. Lee, Ph.D., *Jacob and Frances Hiatt Professor of European History*

Clifford K. Shipton, Ph.D., *Professor (affiliate) of American History*
George A. Billias, Ph.D., *Associate Professor of American History*
Morris H. Cohen, Ph.D., *Associate Professor of Government*
Gerald N. Grob, Ph.D., *Associate Professor of American History*
Daniel R. Borg, Ph.D., *Assistant Professor in European History*

UNDERGRADUATE PROGRAM

The department offers basic courses in the fields of American, European and British history, American and European government, and international relations. It offers major programs of study in history, government and international relations.

All history and government majors must take History 10, preferably in the freshman year; Economics 11, normally before the end of the sophomore year; and History 205a and 205b, in either the junior or senior year. Majors in government should also take Government 15 before the end of the sophomore year. Further elections in this and related departments are determined by the student's special interest, but they are expected to include at least two upper-class courses in this department, in addition to History 205.

Majors in international relations should take History 10 in the freshman year, and Economics 11 and Government 14 before the end of the sophomore year. Also required for this major are History 205a, Government 240b and 241. Six hours in economics (preferably 207 or 200) and six hours in geography or in history.

Non-majors who have not taken History 10 may elect other courses offered by the department with permission of the instructor if, in his judgment, the student has an adequate background for the course.

GRADUATE PROGRAM

The principal fields of graduate study are American, English and European history and politics, modern diplomacy, and the international relations of the United States, Europe, the Commonwealth and the Far East.

Master of Arts: The program for the degree of Master of Arts is worked out individually with each student, who may choose to concentrate on history, government or international relations. All students are required to take the departmental seminar, History 30a.

A master's thesis and an oral examination are required for this degree. A complete draft of the thesis must be received by the Monday following spring recess of the year in which the candidate hopes to receive the degree.

Doctor of Philosophy: The program for the degree of Doctor of Philosophy may be taken in history or international relations. Each student must choose four fields of study, to be agreed upon as early as possible in the first year of residence beyond the Master of Arts and after a conference between the student and the department staff. In a history program, at least one field must be chosen from related subjects. In an international relations program, work in economics and geography should be included upon consultation among the departments concerned. One or two of the four fields should be completed by passing written examinations. The others are tested by an oral examination given by the staff. The passing of the four fields by courses or examination constitutes the "preliminary examination."

Before completing the preliminaries, examinations in French and German must be passed. Permission may be requested to substitute another language for one of these or a second examination in either one designed to demonstrate research competence at a high level.

The doctoral dissertation, written in that field which is designated as the special field, must be submitted in complete preliminary draft to the supervising instructor not later than March 1 of the year in which the candidate hopes to receive the degree. The final examination for the doctorate covers both the dissertation and the special field.

COURSES IN HISTORY

10. Europe and the United States Since 1500.
A study of selected topics designed to illustrate the evolution of modern Western society. The emphasis throughout will be on the thought patterns underlying institutional developments. Mr. Borg, Mr. Campbell, Mr. Grob.

12. History of England.
Constitutional history is emphasized, particularly in the first semester. Mr. Jordan.

202. The Idea of History. Not offered, 1964-65.
A seminar on the idea of history from Thucydides to the Nineteenth Century. Mr. Borg.

205a. Introduction to Political Philosophy.
A study of the main trends of Western political thought to the eighteenth century with reference to their underlying social, political and economic realities. Required of departmental majors. Mr. Jordan.

205b. Recent Political Thought.
The conflicting ideologies of our time in their development since the French Revolution. Required of departmental majors. Mr. Jordan.

208a. Totalitarianism.
A seminar on the origins, ideology and operation of the German Nazi and Italian Fascist regimes. Mr. Borg.

209b. Church and State in Modern Europe.
A seminar on church-state relations since the Reformation, with special reference to political attitudes and involvements of established churches since the French Revolution. Mr. Borg.

21. Foundations of Modern Europe. Not offered, 1964-65.
The later Medieval, Renaissance and Reformation periods. Offered in alternate years. Mr. Lee, Mr. Borg.

210. Europe, 1648-1815.
The rise of the absolute state, the old regime, the French Revolution and Napoleon. Attention is given to the rise of science, the Enlightenment and the origins of liberalism and rationalism. Offered in alternate years. Mr. Borg.

211b. Europe, 1815-1939.
In 1964-65, the period to 1914 will be covered. Offered in alternate years. Mr. Lee.

213b. European Diplomatic History, 1848-1918. Not offered, 1964-65.
Mr. Lee.

215. Germany Since 1500. Not offered, 1964-65.
Offered in alternate years. Mr. Borg.

232B AMERICAN POLITICAL HISTORY, 1828-1877 MR. GROB

22b. Tudor and Stuart England.

The period from 1485 to 1688 with attention to the social backgrounds of English literature and conditions leading to the colonization of America. Mr. Jordan.

221a. England in the Twentieth Century. Not offered, 1964-65.

Stress on individual research on significant problems. Offered in alternate years. Mr. Jordan.

225a. Recent History of the British Empire Commonwealth.

Developments since about 1900. Offered in alternate years. Mr. Jordan.

230. Intellectual History of the United States.

American ideas from the late 17th century to the present. Mr. Grob.

231. American Colonial History.

From the first English settlements to the Revolutionary War era. Mr. Billias.

234a. American Diplomatic History. Not offered, 1964-65.

From 1776 to about 1941. Offered in alternate years. Mr. Hayden.

235a. The United States in the Twentieth Century. Not offered, 1964-65.

Offered in alternate years. Mr. Campbell.

236b. American Political History, 1828-1877. Not offered, 1964-65 Mr. Grob.

237. Era of the American Revolution. Mr. Billias.

238a. The Federalist and Jeffersonian Eras. Not offered, 1964-65

Opportunity for group discussion and individual research in the early national period. Mr. Billias.

239. Introduction to Research in American Colonial History.

Lectures on selected topics and opportunities for research in the field; discussion of problem areas. Admission only by permission of the instructors. Mr. Billias, Mr. Shipton.

274b. The Modern Far East. Not offered, 1964-65.

Primarily, international relations in the region since 1895. Offered in alternate years. Mr. Hayden.

281b. Russia, 1700-1917. Not offered, 1964-65. Mr. Lee.

282b. History of the Soviet System. Not offered, 1963-64.

A brief survey of Marxist ideology and pre-1917 Russian history and a concentration on the political, economic (non-technical) and social evolution of Russia under the Communist regime.

30a. Department Seminar.

Introduction to bibliography and methods of research. Required of all first-year graduate students in the department. Mr. Billias and the Staff.

314a. European International Relations, 1870-1918. Mr. Lee.

331. The Literature of American History: The National Period.

Readings and discussion in the field of United States history since 1815. Mr. Grob.

332. Problems in American Colonial History. Mr. Billias.

GRADUATE READING AND THESIS COURSES

31. Reading
310. Thesis
In the History and International Relations of Europe. Mr. Borg, Mr. Lee.

32. Reading
320. Thesis
In the History and International Relations of England and the British Empire. Mr. Jordan.

33. Reading
330. Thesis
In the History of the United States. Mr. Billias, Mr. Grob.

38. Reading
380. Thesis
In Russian History.

COURSES IN GOVERNMENT

14. International Relations.
A survey of world politics since 1914, with emphasis on the shifting patterns of power and the rise of new nations and revolutionary doctrines. The second semester deals mainly with World War II and later events. Mr. Hayden.

15. Introduction to American Government.
A short survey of the theories of the origins and purposes of the state is followed by a study of American government with emphasis on contemporary problems of the federal government. Mr. Cohen.

240b. Seminar in International Relations.
Basic ideas and their application to current problems. Required for international relations majors. Open to a limited number of non-majors at the discretion of the instructor. Mr. Hayden.

241. International Law and Organization.
First semester deals with the historic principles of international law and their application in the modern world. Second semester deals with the institutions created to handle problems of commerce, welfare and collective security on an international basis. Offered in alternate years. Mr. Hayden.

25a. Comparative Government. Not offered, 1964-65.
The governments and politics of Great Britain and the major European powers. Offered in alternate years. Mr. Cohen.

251a. American Political Parties.
American party organizations, pressure groups and the electorate in American politics, with emphasis on current problems and trends in the field. Offered in alternate years. Mr. Cohen.

252b. Introduction to Public Administration. Not offered, 1964-65.
An examination of the role of administration in modern government, including problems of personnel administration, fiscal management, administrative regulation and government organization. Offered in alternate years. Mr. Cohen.

254. American Constitutional History and Law. MESSRS. CAMPBELL AND COHEN
A study of the major developments in our constitutional system and law, with emphasis in the second semester on contemporary cases and problems. Mr. Campbell, Mr. Cohen.

255b. The Legislative Process. Not offered, 1964-65.
A study of policy-making in Congress, involving problems of legislative organization and procedure, leadership and presidential-legislative relationships, examined primarily by the case method and by individual research on particular pieces of recent legislation.
Mr. Cohen.

341a. Problems in International Relations. Mr. Hayden.

351b. Problems in American Government. Mr. Cohen.

GRADUATE READING AND THESIS COURSES

34. Reading } In International Relations. Mr. Hayden.
340. Thesis }

35. Reading } In American and Comparative Government and Politics.
350. Thesis } Mr. Cohen.

Linguistics

115. Man and Language.
An introduction to the analysis of the nature and function of human language; its role in the life of individuals and societies. What is language? What is the relation between language and thought? Does our language partially determine how we perceive the world? Why do languages change, and how? Is communication the primary function of language? How does language bind social groups together? How are the world's languages related to each other? Why don't we have a world language? The course is designed for the general student who wishes to know more about the nature of the uniquely and universally human institution of language, and for the student or teacher of English or foreign languages who is interested in the light which linguistic science can give upon the relations between his field and other areas of life and knowledge. Mr. Reid.

Mathematics

DEPARTMENT FACULTY

Seymour Hayden, Ph.D., *Associate Professor of Mathematics, Department Chairman*
Zalman Rubinstein, Ph.D., *Associate Professor of Mathematics*
John S. Stubbe, Ph.D., *Associate Professor of Mathematics*
Henry Frandsen, Ph.D., *Assistant Professor of Mathematics*
John F. Kennison, Ph.D., *Assistant Professor of Mathematics*
Connor Lazarov, M.A., *Instructor in Mathematics*

UNDERGRADUATE PROGRAM

The department offers courses leading to a major in mathematics, courses necessary for the study of physical and certain social sciences and courses for the student wishing to learn the fundamental concepts of mathematics.

The departmental major requires five year-courses in mathematics and two year-courses in an allied field of study. Mathematics 12, 13, 113 and 214 are required; while Mathematics 11 cannot be counted among the five year-courses in mathematics.

GRADUATE PROGRAM

The department offers courses leading to the degree of Master of Arts. The program is designed to give the student an understanding of the basic concepts of the major fields of mathematics and to fit him for further study in the subject if his talents warrant it.

Master of Arts: A reading knowledge of one foreign language is required. A thesis is also required, the subject of which may be chosen in consultation with a member of the department.

COURSES

11. FUNDAMENTALS OF MATHEMATICS.

A logical development of elementary mathematics: including an axiomatic treatment of the real number system, arithmetic and elementary algebra, functions and relations, polynomials and topics from the theory of equations, introductory analytic geometry, and the exponential, logarithmic, and trigonometric functions. As a background, the arithmetic and algebra over arbitrary sets will first be considered. Mr. Kennison and Staff.

12. CALCULUS.

Introduction to differential and integral calculus; essential for further study in mathematics as well as for the study of applications in the natural and social sciences.

Mr. Frandsen, and Staff.

13. INTERMEDIATE CALCULUS.

Geometric and physical applications of integration, sequences and series, three-dimensional analytic geometry, partial differentiation, multiple integrals, and a brief introduction to differential equations. Prerequisite: Mathematics 12. Mr. Lazarov.

14a. ELEMENTARY THEORY OF NUMBERS. Not offered, 1964-65.

A study of the properties of divisibility, prime numbers, congruences and residues. Prerequisite: Mathematics 12. Mr. Hayden.

14b. INTRODUCTION TO MATHEMATICAL LOGIC. Not offered, 1964-65.

Axiomatic development of sentential and restricted predicate calculus; theory of classes, relations and functions; introduction to cardinal and ordinal numbers.

15b. DIFFERENTIAL GEOMETRY. Not offered, 1964-65

Elements of the metric geometry of curves and surfaces in Euclidean space developed by methods of calculus and analytic geometry extended to three dimensions. Prerequisite or to be taken concurrently: Mathematics 13. Mr. Kennison.

16a. INTRODUCTION TO GEOMETRY. Not offered, 1964-65.

Topics from projective geometry, non-Euclidean geometry and the foundations of Euclidean geometry. Prerequisite: Mathematics 13 or a B— or better in Mathematics 12.

17. MATHEMATICAL STATISTICS.

Elements of probability theory, frequency distribution test of significance, large and small sampling, analysis of variance. Prerequisite: Mathematics 12. Mr. Stubbe.

18a. POINT-SET TOPOLOGY. Not offered, 1964-65.

Set theory, topological spaces, continuous functions and metric spaces. Prerequisite: Mathematics 13 or at least a B— in Mathematics 12.

113. INTRODUCTION TO LINEAR ALGEBRA AND ANALYSIS.

First semester: mathematical induction, matrices, determinants, vector spaces, Euclidean vector spaces and quadratic forms. Second semester: the real number system, sequences, limits of functions, continuity, uniform continuity, differentiability and elements of point-set topology. Prerequisite: Mathematics 12 or at least a B+ or higher in Mathematics 11 plus consent of the instructor. Mathematics majors will normally take Mathematics 113 concurrently with Mathematics 13. Mr. Frandsen, Mr. Lazarov.

212. NUMERICAL ANALYSIS. Not offered, 1964-65.
Calculus of finite differences, introduction to the theory of interpolation, error analysis, direct and iterative methods for solving equations and systems of equations. Prerequisite: Mathematics 13.

213. POINT-SET TOPOLOGY AND ABSTRACT ANALYSIS. Not offered, 1964-65.
Set theory, general topological spaces, metric spaces, compact spaces, uniform spaces, Banach spaces, Hilbert spaces and function spaces.

214. ADVANCED CALCULUS.
Topics selected from among partial differentiation, integration, infinite series, improper integrals, Fourier series, integral transform and the calculus of variations. Prerequisite: Mathematics 13. Mr. Rubinstein.

215. MODERN ALGEBRA.
Introduction to the theory of groups, rings, integral domain, fields, vector spaces, matrices and related topics. Prerequisite: Mathematics 12 or consent of the instructor. Mr. Frandsen.

216. FUNCTIONS OF A COMPLEX VARIABLE.
Analytic functions, line integrals, conformal mapping, Riemann surfaces. Prerequisite: Mathematics 214 or consent of the instructor. Mr. Rubinstein.

218. FUNCTIONS OF A REAL VARIABLE.
Foundations of the real number system, algebra of sets, transfinite arithmetic, metric spaces, topological spaces, sequences and series, measure theory, differentiation and integration and functional analysis. Prerequisite or taken concurrently: Mathematics 214, or consent of the instructor. Mr. Kennison.

219. PROJECTIVE GEOMETRY. Not offered, 1964-65.
Synthetic and analytic projective geometry, including the projective theory of conics. Prerequisite: Mathematics 12 or consent of the instructor.

220. APPLIED MATHEMATICS.
Ordinary and partial differential equations and their applications, vector analysis, infinite series, line and surface integrals, Bessel functions, Legendre polynomials and Fourier series, introduction to functions of a complex variable. Prerequisite: Mathematics 13. Mr. Stubbe.

221. ALGEBRAIC TOPOLOGY.
Introduction to algebraic topology including homotopy theory, singular and simplicial homology, and application to general spaces. Mr. Lazarov.

222. TOPICS IN ANALYSIS. Mr. Kennison
Content will be changed from year to year to fit the needs of graduate students. and Staff.

223. TOPICS IN ALGEBRA. Mr. Hayden
Content will be changed from year to year to fit the needs of graduate students. ~~Staff~~.

225. Advanced Modern Algebra.
Galois theory, group theory, Wedderburn structure theorems for rings and linear algebras, introduction to algebraic number fields. Prerequisite: Mathematics 215.
Mr. Hayden.

Music

DEPARTMENT FACULTY

Relly Raffman, A.M., *Associate Professor of Music, Department Chairman*
Wesley M. Fuller, M.Mu., *Assistant Professor of Music*

UNDERGRADUATE PROGRAM

The department offers courses designed to teach students how to listen to music intelligently, to develop a comprehension of music on its own terms and to acquaint students with representative works from various periods of music history.

To be admitted to the music major, a student must demonstrate through a written examination a knowledge of the fundamentals of music, and he must demonstrate no later than the beginning of the sophomore year the ability to read and perform simple keyboard works.

The music major *with emphasis in music history* requires the student to take Music 11, 12, 130, and four semesters of music history to be chosen from Music 120 through 124, inclusive. In addition, he must take Music 13a or 13b and a year-course in art history or one semester each of art history and esthetics.

The music major *with emphasis in theory and composition* requires the student to take Music 11, 12, 13a, 13b, 14, and 15, three semester-courses in music history and one semester-course in art history or esthetics.

Although there is no private instrumental instruction offered at the University, it is strongly recommended that students engaged in the major program carry on their study with a qualified teacher. They are also expected to become members of the University Chorus and/or Orchestra. Practice space is available at a nominal rental fee.

COURSES

THEORY AND COMPOSITION

10~~a~~. Introduction to Music.
Designed for the non-major, this course is a prerequisite for entrance into Music 20 through 24, inclusive. No credit toward the major allowed. Open to freshmen. Staff.
Messrs. Raffman + Fuller

11~~a~~. Primary Theory.
The study of music theory from the ancient Greeks to the 19th century. Open to freshmen. Prerequisite: consent of the instructor. Mr. Raffman ~~Staff~~.

12. Advanced Theory. Not offered, 1964-65.
The 19th and 20th centuries. Prerequisite: Music 11. Offered in alternate years. Staff.

13a. SIXTEENTH CENTURY COUNTERPOINT. Not offered, 1964-65.
Prerequisite: Music 11. Offered in alternate years. Mr. Fuller.

13b. EIGHTEENTH CENTURY COUNTERPOINT. ~~Not offered, 1964-65~~.
Prerequisite: Music 11. Offered in alternate years. Mr. Raffman.

14. ORIGINAL COMPOSITION *(small forms)*. Junior Seminar. Not offered, 1964-65. Staff.

15. ORIGINAL COMPOSITION *(large forms)*. Senior Seminar. Not offered, 1964-65. Staff.

MUSIC HISTORY

120a. MEDIEVAL AND RENAISSANCE PERIODS. Not offered, 1964-65
A survey of music before 1600. Prerequisite: Music 10a. Offered in alternate years. Mr. Fuller.

120b. BAROQUE AND CLASSICAL PERIODS.
A survey of music from 1600 to 1800. Prerequisite: Music 10a. Offered in alternate years. Open to freshmen. Mr. ~~Raffman~~. Fuller

121a. NINETEENTH CENTURY MUSIC. Not offered, 1964-65.
Prerequisite: Music 10a. Offered in alternate years. Mr. Fuller.

121b. TWENTIETH CENTURY MUSIC. Not offered, 1964-65.
Prerequisite: Music 10a. Offered in alternate years. Open to freshmen. Mr. Raffman.

122b. OPERA. Not offered, 1964-65.
With the help of translated librettos, recordings and selected readings, a study is made of a group of operas representing all periods of operatic history, with emphasis on the many solutions to the combination of music and drama. Open to freshmen. Offered in alternate years. Prerequisite: Music 10a. Mr. Fuller.

123b. CHORAL MUSIC.
Selected choral compositions from all periods of music history will be analyzed with score and recording. Because the study of performance problems is of key importance, a number of the works will be performed by the class. Open to freshmen. Prerequisite: Music 10a or permission of the instructor. Offered in alternate years. Mr. Fuller.

124a. CHAMBER MUSIC.
The development of music for solo instrument (keyboard) and small ensemble from 1600 to present. Field trips to Boston and to nearby colleges and museums for performances are made as the schedule permits. Open to freshmen. Prerequisite: Music 10a. Offered in alternate years. Mr. Raffman.

130. SENIOR SEMINAR IN MUSIC HISTORY. Not offered, 1964-65. Staff.

Philosophy

DEPARTMENT FACULTY

Robert N. Beck, Ph.D., *Professor of Philosophy, Department Chairman*
Jefferson A. White, Ph.D., *Assistant Professor of Philosophy*

UNDERGRADUATE PROGRAM

The department offers courses to students who wish to broaden their perspective and trace relations among the various fields of knowledge and to students who wish to major in philosophy.

The major consists of four courses in philosophy and three additional courses in related fields. The latter are determined according to the student's special interest.

COURSES

11a. Logic and Scientific Method.
Principles of valid reasoning and inductive methods and their application to problems of the natural and social sciences. Consideration of the relations between logic and problems of value. Open to freshmen. Mr. Beck.

11b. Problems of Philosophy.
Nature and method of philosophy. Application of philosophical method to contemporary personal and social problems. Detailed analysis of some typical problems in various fields of philosophy. Open to freshmen. Mr. Beck.

Philosophy 12 series is organized in three semester-courses, I, II and III.

121a. History of Ancient Philosophy I.
Movements of philosophical thought from their origins with the early Greeks through the medieval period. Mr. White.

122b. History of Modern Philosophy II.
Major thinkers and philosophical movements from the beginnings of the modern period in Descartes to the 19th century. Prerequisite: one half-course in philosophy or History 10. Mr. White.

123a. History of Recent Philosophy III.
Recent developments in philosophy, with emphasis on the historical roots of contemporary thought. Prerequisite: Philosophy 122b. Mr. White.

13a. Problems of Ethics.
Consideration of important ethical theories to acquaint the student with problems and scope of ethics and to aid him in the formulation of an ethical outlook. Offered in alternate years. Open to juniors and seniors. Mr. Beck.

13b. Esthetics. Not offered, 1964-65.
The nature of art, the characteristics of esthetic experience, and the relation of art to the human enterprise as a whole. Special reference is made to representative figures in contemporary philosophy. Open to juniors and seniors. Mr. White.

14a. Social Philosophy. Not offered, 1964-65.
Principles underlying social structure and functions. Examination of the goals, purposes, norms and ideals of social process, and the relation of that process to the individual good. Offered in alternate years. Open to juniors and seniors. Mr. Beck.

14b. History of American Philosophy.
Survey of important philosophical ideas in America with emphasis on their relationship to American experience. Mr. Beck.

15b. Philosophy of Religion
The nature of religion as revealed by an examination of the history of world religions and representative types of contemporary religious philosophy. Open to juniors and seniors. Prerequisite: one half-course in philosophy. Mr. White.

201-4. Seminar in Philosophy. 203a + 204b offered in 1964-65
Advanced study of topics of central importance to philosophy. Prerequisites: two year-courses in philosophy, including 121 and 122. 203a: Hegel Staff.
204b: Time and History

Honors in Philosophy.
Advanced individual study of philosophic problems. Honors includes the preparation of an acceptable thesis and a comprehensive examination. Prerequisite: consent of the department. Staff.

Education 290b. Philosophy of Education.
Description offered in the department statement under Education.

Physics

DEPARTMENT FACULTY

Roy S. Anderson, Ph.D., *Professor of Physics, Department Chairman*
~~John H. Muller, Ph.D., *Associate Professor of Physics*~~
Earl E. Hays, Ph.D., *Associate Professor (affiliate) of Physics*
John A. Davies, Ph.D., *Assistant Professor of Physics*
Roger P. Kohin, Ph.D., *Assistant Professor of Physics*

UNDERGRADUATE PROGRAM

The department offers courses to students wishing to major in physics. While emphasis is placed on preparation for graduate study, the major will also assure adequate training for teaching or professional work in physics.

The major includes Physics 101, 200, 201a, 204b, 206a, and 207b, Mathematics 13, and one course in chemistry, usually Chemistry 11. Students preparing for graduate work in physics are urged to register for one course in mathematics each year and to elect Physics 202a, 203b, and 208b. It is recommended that the college language requirement be satisfied by German or Russian, or by passing the second year of both.

Physics 101 and Mathematics 13 are the normal prerequisites for all 200-level courses in physics. Students may be admitted directly to Physics 101 by passing an advanced placement examination.

Students in the Honors Program must register for at least one course credit of Physics 235 and, at the conclusion of this course, must submit to the department a thesis based on this work. Recommendation for Honors in Physics is determined by the quality of the thesis and the performance of the student on a comprehensive examination in physics. An Honors candidate must maintain a B— average in physics courses.

Since 1962 the National Science Foundation, through its Undergraduate Science Education Program, has provided students with summer stipends which make possible research on individual problems.

Attention is directed to courses, particularly in nuclear physics, mathematics, and electrical engineering, available for credit at the Worcester Polytechnic Institute.

GRADUATE PROGRAM

Graduate studies are offered leading to the degrees of Master of Arts and Doctor of Philosophy. The Ph.D. Program is at present limited to Chemical Physics, which is broadly defined to include the areas of atomic, molecular, and solid state physics. The Chemical Physics program, offered in cooperation with the Department of Chemistry, consists of a combination of courses in physics, mathematics, and chemistry. Guidance of students in the program is provided by the faculty of the Department of Physics. Dissertation research is conducted in the Department of Physics.

Departmental research is principally concerned with atomic, molecular, and solid state physics. Structural and electric and magnetic properties are studied experimentally using electron spin resonance and nuclear magnetic resonance techniques. Theoretical research is being conducted on atomic scattering properties in gases. Research in geomagnetism and oceanography has been instituted in cooperation with the Woods Hole Oceanographic Institution.

Each graduate student in physics must pass the Physics Comprehensive Examination before he is recommended for candidacy for a graduate degree. The examination, at the upper class undergraduate level, consists of a three hour written examination in each of the fields of mechanics, electricity and magnetism, and modern physics. It is given early in September and May of each year.

Students in the Doctor of Philosophy program are required to pass seven courses, including Physics 301, 304b, and 306. The remaining courses may be selected from graduate offerings in biology, chemistry, mathematics, and physics. All students register for one credit of Physics 350, Research. The Graduate School language requirement may be satisfied by demonstrating a reading knowledge of either German or Russian.

Graduate scholarships and fellowships and teaching and research assistantships are available. A detailed description of programs of study, research activities, research facilities, and financial aid is available on request from the department chairman.

COURSES

11. General Physics.

The principles of mechanics, heat, wave motion, electricity, and atomic and nuclear physics. Three lectures and one laboratory per week. Prerequisite: consent of the instructor is required in the absence of two years of high school algebra and trigonometry, or the equivalent. Indivisible course, except by consent of the instructor. Mr. Anderson.

101. Intermediate Physics.

Intermediate mechanics and electricity, using vector analysis. Mechanics: the statics and dynamics of particles, systems of particles and rigid bodies. Electricity: electric and magnetic fields and potentials. Direct, alternating and transient currents. Circuits and circuit elements. Three lectures and one laboratory per week. Required of physics majors. Prerequisite: Mathematics 12. Mr. Anderson, Mr. Hays.

200. Advanced Physical Measurements.

Laboratory in atomic, molecular, nuclear and solid-state physics. Three hours each week, throughout the year, for one-half course credit. Required of physics majors. Mr. Kohin.

201a. Mechanics.

Advanced methods in mechanics, with emphasis on the motion of rigid bodies. D'Alembert's principle and Lagrange's equations. Required of physics majors. Mr. ~~Muller.~~
Kohin

202a. Thermodynamics and Kinetic Theory. Not offered 1964-65.
The laws of thermodynamics, the kinetic theory of gases, and an introduction to statistical mechanics. Offered in alternate years. Mr. Anderson.

203b. Physical Optics. Not offered 1964-65.
The phenomena of diffraction, interference and polarization of light as explained by the electromagnetic theory. Three lectures and one laboratory per week. Offered in alternate years. ~~Mr. Muller~~.

204b. Electromagnetism.
The mathematical theory of electricity and magnetism. Fields and potentials. Maxwell's equations. Electromagnetic waves. Required of physics majors. Mr. Davies.

205a. Electronic Devices and Circuits. Not offered, 1964-65
Principles of electron tubes and transistors, with emphasis on design of electronic circuits. Three lectures and one laboratory per week. Offered in alternate years. ~~Mr. Muller~~.

206a. Modern Physics.
An introduction to the quantum nature of molecules, atoms and nuclei. Special relativity. The old quantum theory. The correspondence principle. Wave-particle duality. The uncertainty principle. The wave equation. Concurrent registration required in Physics 200. Required of physics majors. Prequisite: Physics 204b and Mathematics 13. Mr. Kohin.

207b. Quantum Physics.
An introduction to quantum wave mechanics. Solutions of the Schrodinger equation. Operator techniques. Angular momenta. Approximation methods. Spectroscopy. Required of physics majors. Prerequisite: Physics 206a. Mr. Kohin.

208b. Introduction to the Solid State. Not offered, 1964-65
Crystal structure: symmetry and space groups. Chemical bonding: ionic and covalent crystals. Thermal and elastic properties. The band theory of metals and semi-conductors. Dielectric and magnetic properties. Low temperature properties, including superconductivity. Offered in alternate years. Mr. Anderson.

218. Physics and the Earth Sciences. Not offered, 1964-65.
The application of physics to problems in oceanography, seismology, and the atmosphere, with emphasis on the physical problems common to all. Selected readings are utilized. One-half course credit through the year. Mr. Hays.

230. Special Topics in Physics.
Independent studies in physics to provide for special needs. Staff.

235. Honors.
Independent experimental or theoretical research in physics. Staff.

301. Advanced Mechanics.
Lagrangian and Hamiltonian formulations. Kinematics and dynamics of rigid bodies. Prerequisite: Physics 201a. Mr. Davies ~~Mr. Kohin.~~

303a. Statistical Mechanics. Not offered, 1964-65
The dynamics of gas particles as interpreted by the kinetic theory of ideal and non-ideal gases. Maxwell-Boltzmann canonical distribution. Fermi-Dirac and Bose-Einstein quantum distributions. The partition function. Applications to classical and quantum states

of gases, specific heats, transport phenomena, and electric and magnetic properties of matter. Prerequisite: Physics 207b or equivalent. Mr. Davies

304b. ELECTRODYNAMICS.
Maxwell's equations. Scalar, vector and retarded potentials. Electromagnetic radiation. Boundary value problems. Prerequisite: 204b or equivalent. Mr. Kohin ~~Mr. Muller~~.

305. QUANTUM MECHANICS.
Wave mechanics and the Schrodinger equation. Stationary and time-dependent approximation methods. The matrix formulation. Scattering theory. Prerequisite: Physics 207b. Mr. Davies.

307b. THEORY OF THE SOLID STATE. Not offered, 1964-65
Application of quantum mechanics and group theory to solids. Thermal, electric, magnetic, and optical properties. Energy bands and their structure. Prerequisite: Physics 208a and 305. ~~Mr. Muller.~~

308a. THEORY OF ATOMIC AND MOLECULAR SPECTRA. Not offered, 1964-65.
The electronic configuration of atoms: the Pauli principle and the building-up principle. Fine structure and the spinning electron. The Zeeman and Paschen-Back effects. Nuclear effects: hyperfine structure. The structure and properties of molecules as revealed by rotational, vibrational, and electronic spectra. Covalent and ionic bonds. Prerequisite: Physics 305 or consent of the instructor. Mr. Kohin.

309b. MAGNETIC RESONANCE. Not offered, 1964-65.
The theory of the electron spin and nuclear magnetic resonance experiments, particularly in solids. The spin Hamiltonian and the magnetic interaction between particles. Chemical bonds and their description by the molecular orbital method. Prerequisite: Physics 308a. Mr. Kohin.

340. SEMINAR. Not offered, 1964-65
Seminars on various topics of contemporary interest are offered each year. Emphasis is on discussions of recent literature in each field and the presentation of department research in the area. Staff.

350. RESEARCH. Staff.

335 TOPICS IN THEORETICAL PHYSICS MR. DAVIES

Psychology

DEPARTMENT FACULTY

Seymour Wapner, Ph.D., *G. Stanley Hall Professor of Genetic Psychology, Department Chairman*
Tamara Dembo, Ph.D., *Professor of Psychology*
Bernard Kaplan, Ph.D., *Professor of Psychology*
Morton Wiener, Ph.D., *Professor of Psychology*
Clemens E. Benda, M.D., *Professor (affiliate) of Psychology*
David Moriarty, M.D., *Professor (affiliate) of Clinical Psychology*
Leslie Phillips, Ph.D., *Professor (affiliate) of Psychology*
Joseph Weinreb, M.D., *Professor (affiliate) of Psychology*
Robert W. Baker, Ph.D., *Associate Professor of Psychology*

ABRAHAM H. BLUM, PH.D., LECTURER IN PSYCHOLOGY
NORMAN GESHWIND, PH.D., LECTURER IN PSYCHOLOGY
WILLIAM VOGEL, PH.D., LECTURER IN PSYCHOLOGY

Roger Bibace, Ph.D., *Associate Professor of Psychology*
Walter H. Crockett, Ph.D., *Associate Professor of Psychology*
Gordon T. Gwinn, Ph.D., *Associate Professor of Psychology*
Donald M. Krus, Ph.D., *Associate Professor of Psychology*
Sebastiano Santostefano, Ph.D., *Associate Professor of Psychology*
Joachim F. Wohlwill, Ph.D., *Associate Professor of Psychology*
Helen L. Bee, Ph.D., *Assistant Professor of Psychology*
Herbert Lipton, Ph.D., *Assistant Professor (affiliate) of Psychology*
Donald Broverman, Ph.D., *Lecturer in Psychology*
Juris Draguns, Ph.D., *Lecturer in Psychology*
Harold Goodglass, Ph.D., *Lecturer in Psychology*
Edward L. Klaiber, M.D., *Lecturer in Psychology*
Anthony Varjabedian, M.D., *Lecturer in Psychology*
Peter H. Wolff, M.D., *Lecturer in Psychology*
Polly Deweese, M.S., *Consultant to the Psychological Clinic, Psychiatric Social Worker*
Victor H. Pentlarge, M.D., *Consultant to the Psychological Clinic, Psychiatrist*
Bernard P. Rosenblatt, Ph.D., *Consultant to the Psychological Clinic*
Malcolm Sills, M.D., *Consultant to the Psychological Clinic*
Howard J. Slepian, Ph.D., *Consultant to the Psychological Clinic*

UNDERGRADUATE PROGRAM

The department offers courses for students majoring in psychology, majors in allied fields and students wishing an orientation to the field of psychology for general cultural development.

Psychology 11 is prerequisite to all other psychology courses. Majors are required to take Psychology 11 and a minimum of two courses in the Experimental Psychology grouping (Psych. 173b, 203b, 204a, 210b, 236a). Of the two courses at least one must be 203b or 204a. Permission of the instructor is required for each course in the Experimental Psychology grouping. In addition, each of these courses requires Psychology 160b or its equivalent; this requirement may be waived with permission of the instructor. Students preparing for graduate work should obtain a reading knowledge of French and German.

GRADUATE PROGRAM

The department admits to graduate work only those students who plan to enroll in the Ph.D. program on a full-time basis. A Master of Arts degree, based on an experimental thesis, ordinarily completed within the first two years of graduate work, is a requirement for admission to candidacy for the Ph.D. degree.

Master of Arts: The customary program is five courses, including experimental psychology, statistical methods and three additional courses, supplemented by the writing of a thesis in the area of special interest.

Doctor of Philosophy: The student is required to pass with distinction five courses during the first year of graduate study and a minimum of four courses during the second year. The University language requirement must be met by a knowledge of French, German or Russian. He is required, normally at the end of the second year, through written examination, to demonstrate his competence in psychology as a whole and in an area of specialization. In addition, the student is required to demonstrate his ability to conduct independent research as evidenced by the presentation of an acceptable dissertation. Research for the dissertation should normally be completed during the fourth year at the University; however, the length of the program will vary depending upon individual circumstances. At a final oral examination a student is required to defend his dissertation and to show his competence in the general field of psychology and in his area of specialization.

The overall aim of the graduate program is to provide the student with a general, integrated background covering the various areas of psychology. Within this emphasis more specialized training—with special stress on experimental analysis—is available in the following areas: perception, learning, thinking and problem-solving, language, social, and personality.

There are also three more formalized programs which provide specialized training in the areas of Clinical, Developmental and Rehabilitation Psychology.

Clinical Psychology Program. The department offers a four-year A.P.A.-approved program in clinical psychology leading to the degree of Doctor of Philosophy. Beyond the standards of proficiency in the general field of psychology expected of all students, the student in the Clinical Program will be required to demonstrate special mastery in the understanding of concepts in the clinical area and in the use of clinical methods. One year of internship is included in this four-year program. Provision is made for a wide variety of practical experiences in cooperating institutions, clinics and agencies. There are over 20 institutions and agencies in Worcester, Boston, Providence and surrounding areas which cooperate in providing such practicum and research facilities. In addition to the one-year internship, all students in the Clinical Program obtain a variety of practicum experiences in the Psychological Clinic throughout their enrollment in the graduate program. For further information, write to the director of the program: *Dr. Morton Wiener.*

A Psychological Clinic, directed by *Dr. Robert W. Baker,* is operated in connection with the Clinical Psychology Program. For further information concerning the clinic, see that section in the catalog.

Developmental Psychology Program. This program is designed to train students in a comparative-developmental analysis of behavior. It emphasizes not only the study of human development from infancy to old age, but also stresses the application of developmental principles, concepts and methods to problems of general psychology, psychopathology, social psychology, etc. For further information, write to the director of the program: *Dr. Joachim F. Wohlwill.*

Rehabilitation Research Training Program. In conjunction with all other areas of specialization, rehabilitation research training is available. Such training normally begins after the first two years of graduate work. This training is designed to prepare students for investigation of psychological problems as they occur in everyday life. Emphasis on development of novel techniques and concepts is a main feature of the training. An apprenticeship-practicum during which the various phases of research in real-life settings are examined under the guidance of staff members is an integral part of the program. This program is especially pertinent to those who wish to work with handicapped people. For further information, write to the director of the program: *Dr. Tamara Dembo.*

Financial Aid. In addition to University scholarships, fellowships, teaching assistantships, and stipends, the department has available such forms of financial support as United

States Public Health Service and Vocational Rehabilitation Administration training stipends, Veterans Administration assistantships and stipends, and research assistantships.

THE HEINZ WERNER INSTITUTE OF DEVELOPMENTAL PSYCHOLOGY

Associated with the department is the Heinz Werner Institute of Developmental Psychology, which has three aims: first, to integrate various research programs dealing with developmental problems; second, to bring to Clark University scholars, teachers, and research workers from disciplines for which developmental problems are pertinent such as anthropology, biology, and certain areas of medicine; third, to train research workers on pre- and post-doctoral levels in the comparative-developmental approach to behavior.

COURSES

11a. General Psychology.
Introduction to the principles of human behavior. Mr. Crockett and Staff.

11b. General Psychology.
Introduction to the principles of human behavior. Mr. Crockett and Staff.

103b. The Abnormal Personality.
Development of the abnormal personality and a survey of the major types of abnormal behavior. Prerequisite: Psychology 172a. Mr. Wiener.

150a. Introduction to Child Psychology: Physical and Intellectual Development.
The normal development of the child from infancy up to adolescence, with emphasis on the areas of physical and motor development, cognitive processes and language, and emotional and fantasy life. Mr. Wohlwill.

150b. Introduction to Child Psychology: Personality and Social Development of the Child.
The development of the child's personality and interpersonal behavior, in relation to family, peer group and culture. Miss Bee.

160b. Introduction to Quantitative Methods in Psychology.
Problems of psychological measurement and statistical evaluation of psychological data. Mr. Wohlwill.

170b. Social Psychology.
The role of social factors in the behavior of individuals and of groups, including such topics as attitudes, prejudice, leadership and personality and culture. ~~To be announced.~~ Mr. Blum

172a. Psychology of Personality.
The various theoretical approaches to the study of personality, with emphasis on trait theories, typologies, field theory and psychoanalysis. Also considered are the determinants of personality development and methods of appraising personality. Mr. Draguns.

173b. Laboratory Research in Social Psychology. Not offered, 1964-65.
Investigation of such phenomena as small group interaction, interpersonal perception, and attitude measurement and change. Prescribed experiments will be conducted in a series of problems, culminating in an original investigation and report of some problems of interest to the student. Prerequisite: Psychology 170b. Mr. Crockett.

202b. Psychology of Thinking.
Types of thought processes and methods of investigating them, with emphasis on concept formation, imagination, creative thought, reasoning and problem solving.
Mr. Gwinn.

203b. a+ Laboratory Research in Perception.
The Laboratory Course in Perception will include investigation of sensory and perceptual phenomena in a variety of sense modalities. Laboratory experience will involve a progression from prescribed small experiments to designing experiments in restricted areas, and, finally, original experimentation in an area of special interest to the student. Theoretical and methodological issues will be considered in the context of specific experimentation.
Mr. Krus.

204~~a~~. Laboratory Research in Learning.
Discussions of various theories of learning and their application to empirical findings.
Mr. Gwinn.

209a. Developmental Approaches to Behavior.
A critical examination of presuppositions, methods, concepts and empirical inquiries of those concerned with the development of behavioral systems. Implications of developmental conceptualization for all of the life sciences will be discussed. Psychological theories of Freud, Piaget and Werner will be given special emphasis.
Mr. Kaplan.

209b. Developmental Approaches to Behavior.
A seminar on selected theoretical and methodological issues pertaining to the developmental analysis of behavior.
Mr. Kaplan.

210b. Laboratory Research in Developmental Psychology.
The Laboratory Course in Developmental Psychology will be aimed at giving students direct experience with the phenomena described by Heinz Werner and Jean Piaget. The course will exemplify concepts such as syncresis in different populations (young children, schizophrenics, mentally retarded, etc.) and at different developmental levels, for instance, at the level of action or of thought. (Students are required to participate in eliciting and classifying cognitive processes, and conducting an original experiment.)
Mr. Bibace.

220a. Mathematical Approaches to Psychology. Not offered, 1964-65.
Intensive analysis of several mathematical models used in psychology. Offered in alternate years. Prerequisite: Mathematics 12 or consent of the instructor.
Mr. Crockett.

222a. Physiological Psychology.
A consideration of physiological mechanism of relevance to psychological problems.
Mr. Vogel ~~Instructor to be announced~~.

223b. Seminar in Social Psychology. Not offered, 1964-65.
Detailed examination of the methods and theory appropriate to a specific area in social psychology. In different years the course will cover interpersonal perception, attitude development and change, conformity to group norms, small group processes and similar topics. Included in the course is the preparation of an original investigation in the content area. Offered in alternate years.
Mr. Crockett.

231a. Seminar in the History of Psychology.
Historical development of theories and methods in psychology. Prerequisite: consent of the instructor.
Mr. Gwinn.

232b. Seminar in Modern Psychological Theories.
Comparisons and evaluations of various modern theories in psychology. Prerequisite: consent of the instructor. Mr. Gwinn.

236a. Laboratory Research in Child Psychology.
Survey of research methods used in the study of children, with particular emphasis on observational techniques. Lecture: 2 hours; Laboratory: 3 hours; Prerequisite: Psychology 160b. Miss Bee.

297. Directed Readings in Psychology.
Independent study by majors for students not doing honors work. Staff.

298. Honors in Psychology: Junior year. Staff.

299. Honors in Psychology: Senior year. Staff.

301. Experimental Method in Psychology.
Experimental Method considered generally and in its application to problems of perception. Lecture: 2 hours; Laboratory: to be arranged. Mr. Wapner.

302. Statistical Methods.
Descriptive statistics, statistical inference and experimental design in psychology. Mr. Crockett.

304a. Physiological Aspects of Behavior, I.
Neuro-anatomy as related to behavior. Offered in alternate years. Mr. Varjabedian.

305b. Physiological Aspects of Behavior, II. Not offered, 1964-65.
Neurophysiological aspects of behavior. Offered in alternate years.

310. Apprenticeship in Rehabilitation: Introductory. Miss Dembo.

311. Clinical Methods, I.
Observation, interviewing and testing. Mr. Baker.

312a. Theories of Deviant Behavior. Not offered, 1964-65.
Deviant behavior as viewed by various theories. Clinical and experimental evidence is examined. Offered in alternate years. Mr. Bibace.

313b. Principles and Concepts Underlying Psychological Tests.
Problems of psychological assessment by non-projective tests. Mr. Broverman.

315. Advanced Child Psychology. Not offered, 1964-65.
Major dimensions and determinants of ontogenetic changes in behavior. Methodological problems in the study of children and in the assessment of developmental change. Offered in alternate years. Mr. Wohlwill.

316. Research Methods in the Study of Children.
Offered in alternate years. Miss Bee.

317b. Behavior in Infancy.
Offered in alternate years. Mr. Wolff.

318. Seminar in Psychology of Interpersonal Relationships and Rehabilitation.
Value problems pertinent to interpersonal relations will be discussed, including value

306B PSYCHOBIOLOGICAL FOUNDATIONS OF BEHAVIOR MR. GESHWIND possessions, value losses, regaining of values and adjustment to value losses. Offered in alternate years. Miss Dembo.

319. TOPOLOGICAL PSYCHOLOGY AND REHABILITATION. Not offered, 1964-65.
Offered in alternate years. Miss Dembo.

321. HIGHER MENTAL PROCESSES.
Experimental research pertaining to such functions as remembering, classifying, problem-solving, reasoning and concept-forming. Mr. Kaplan.

322. ADVANCED SEMINAR ON ORGANISMIC-DEVELOPMENTAL APPROACHES TO BEHAVIOR.
Basic categories of the organismic-developmental approach to life sciences, with examination of the application of these categories to a wide range of problem areas in psychology. Mr. Kaplan.

323. PSYCHOLOGY OF LEARNING.
Theoretical viewpoints and experiments in the field of learning. Mr. Gwinn.

324. THEORIES OF PERSONALITY.
Comparison of various theoretical approaches to the study of personality. Mr. Wiener.

325. ADVANCED SOCIAL PSYCHOLOGY.
Intensive analysis of various theoretical systems in social psychology. To be announced.

326b. THEORY OF PSYCHOLOGICAL SCALING. Not offered, 1964-65.
Analysis of mathematical approaches to psychological scaling. Prerequisite: Psychology 220a. Offered in alternate years. Mr. Crockett.

327a. CLINICAL AND EXPERIMENTAL BEHAVIORAL ASSESSMENT OF CHILDREN.
Demonstration and theoretical consideration of various clinical and experimental methods useful in assessing personality functioning and coping in children. The viewpoint of psychoanalytic ego psychology is emphasized. Mr. Santostefano.

330. APPRENTICESHIP IN REHABILITATION: Intermediate. Miss Dembo.

331. CLINICAL METHODS, II.
Application of various clinical methods in the assessment of personality. Mr. Goodglass.

332a. THEORIES OF PSYCHOTHERAPY.
Comparison of various theoretical approaches to problems of psychotherapy.
Mr. Wiener.

336a. CHILD PSYCHOLOGY IN RELATION TO GENERAL PSYCHOLOGY.
Theory and research in child psychology in relation to general psychological theory. Offered in alternate years. Mr. Wohlwill.

337. SEMINAR ON PROBLEMS IN CHILD AND DEVELOPMENTAL PSYCHOLOGY.
Mr. Wohlwill and Miss Bee.

346b. DEVELOPMENTAL PSYCHOLOGY AND PSYCHOANALYSIS.
Offered in alternate years. Mr. Bibace.

350. APPRENTICESHIP IN REHABILITATION: ADVANCED. Miss Dembo.

351. CLINICAL METHODS, III.
Integration of various methods in assessment of personality and behavior. Mr. Phillips.

352. Clinical Methods, IV.
Application of theoretical principles to psychotherapy. Mr. Weinreb.

356~~a~~b. Psychopathology of Childhood. ~~Not offered, 1964-65.~~
Offered in alternate years. Mr. Benda.

357. Psychology of Symbolic Behavior. Not offered, 1964-65.
Basic aspects of symbolic behavior; theory, experimental research, ontogenesis, psychopathology of symbol formation. Offered in alternate years.

358. Psychology of Language, I. Not offered, 1964-65.
Language theory, ontogenesis of speech and experiments on language behavior.

359. Psychology of Language, II. Not offered, 1964-65.
A seminar on comparative psychology of language behavior. In the first semester the relation between language formation and cultural levels will be stressed by drawing on anthropological data. Second semester deals with abnormal psychology of language behavior.

364b. Selected Problems in Psychopharmacology. Mr. Krus and Visiting Staff.

380. Research in Psychology.
Direction of individual students in their research. Staff.

381. Readings in Psychology.
Critical analysis of literature in areas related to individual research. Staff.

385. Participation in Psychological Clinic, I. Mr. Baker, Mr. Lipton, Mr. Slepian.

386. Participation in Psychological Clinic, II. Mr. Baker, Mr. Lipton, Mr. Slepian.

387. Participation in Psychological Clinic, III.
Mr. Moriarty, Mr. Pentlarge, Mr. Rosenblatt, Mr. Sills, Mr. Wiener, Mr. Weinreb.

388. Participation in Psychological Clinic, IV.
Mr. Baker, Miss Deweese, Mr. Moriarty, Mr. Pentlarge, Mr. Rosenblatt, Mr. Sills, Mr. Wiener, Mr. Weinreb.

389. Internship. Staff.

390. Departmental Colloquium. Visiting Lecturers.

WORKSHOPS

Conducted annually in such areas as comparative-animal psychology, scaling theory, factor analysis, rehabilitation, cultural anthropology, ethnolinguistics, pathology of language.
Visiting Lecturers.

Romance Languages

DEPARTMENT FACULTY

J. Richard Reid, Ph.D., *Professor of Romance Languages, Department Chairman*
*Raymond E. Barbera, Ph.D., *Associate Professor of Romance Languages*
J. Fannin King, M.A., *Associate Professor of Romance Languages*

*- On leave, first semester, 1964-65

*Theodore Nicol, Ph.D., *Associate Professor of Romance Languages*
Mordecai S. Rubin, Ph.D., *Assistant Professor of Romance Languages*
H. Allen Whartenby, Ph.D., *Assistant Professor of Romance Languages*
Richard A. Ray, M.A., *Instructor in Romance Languages*

* . On leave, second semester, 1964-65

UNDERGRADUATE PROGRAM

The department offers courses in the languages and literatures of France, Spain and Spanish America. These courses fall into two groups: lower level—French and Spanish 11 and 12, and upper level—all other Romance language courses.

In the lower level the primary aim is the mastery of the skills of communication in a language, with a view to its effective use for a variety of possible ends. These skills include reading, writing, speaking and understanding as well as what may be called basic literacy in the language.

In the upper level, the primary aim is an acquaintance in depth with a foreign civilization, principally through a study of its literature but with attention also to other aspects of its culture and to the further perfection of linguistic competence. The courses in literature are complemented by others in civilization and in advanced composition, conversation and phonetics.

A major in Romance languages must comprise:

1. Four full courses to be chosen from French 13, 114, 123a, 151a, 152a, 153b and 154b; Spanish 13 and 114; and Romance Languages 124b and 250.
2. French 113 or the equivalent.
3. History 10, or the equivalent, normally to be completed by the end of the sophomore year.
4. At least one course, to be approved by the department, in non-Romance literature.

Students majoring in Romance languages are expected to acquire a thorough knowledge of either French or Spanish and are urged to acquire a competent knowledge of the other, both in language and literature.

Students intending to major in Romance languages should consult the department chairman. An honors program in Romance languages is available to qualified upperclassmen.

LANGUAGE LABORATORY

A modern electronic language laboratory is available for class instruction, independent study and self-appraisal. Use of the laboratory is required of students in the lower level and "13" courses in French and Spanish, and available to others. See the section on "Tuition and Other Charges" for the laboratory fee.

DEPARTMENTAL INTERNSHIP PROGRAM

The department cooperates with the Department of Education in a graduate program of preparation of teachers of Romance languages, leading to the degree of Master of Arts in Education. Participants carry appointment as Teaching Assistant Scholars and as Departmental Interns in Romance languages. Normally requiring two years, the program consists of half-time study in education and Romance languages and literatures, and half-time devoted to supervised teaching and other assistance to the Department of Romance Languages.

COURSES IN FRENCH

11. Elementary.

A course for beginners, including the elements of grammar, pronunciation and conversational patterns, graded readings and the writing of simple French. Three class periods and one to two hours in the language laboratory per week. Laboratory fee. Open to freshmen. Indivisible course. Staff.

12. Intermediate.

Review of the elements, and further development of basic literacy and of a balanced mastery of all the communication skills; intensive and extensive reading. An intensive oral approach is used in the classroom. Three class meetings and one to two hours in the language laboratory weekly. Laboratory fee. Prerequisite: French 11 or equivalent skill in the language to be determined by a placement test. Open to freshmen. Indivisible course. Staff.

*13. Oral and Written French.

A third-year course. Admission is subject to approval of the instructor in each semester. The normal sequence is 13a during the spring semester of one year followed by 13b the following fall semester. The two parts of the course are organized as follows.

13A. Given in the spring semester.

Analytical study and practice of the elements of communication in French: basic conversation patterns; the sound, rhythm and tone patterns of French pronunciation; review of grammatical topics; exercises in written expression. Conducted in French. Prerequisite: Grade of B— or higher in French 12, or equivalent skill in the language to be determined by a placement test. Open to freshmen. Offered in alternate years. Two regular class periods, one two-hour session and one to two hours in the laboratory per week. Laboratory fee. Mr. King.

13B. Given in the fall semester. Not offered, 1964-65

Advanced practice of communication in French. Compositions, oral reports, classroom discussion. Conducted in French. Prerequisite: French 13a, or equivalent skill in the language, to be determined by a placement test. Offered in alternate years. Two regular class periods, one two-hour session and one to two hours in the laboratory per week. Laboratory fee. Mr. King.

*14. Readings in French Literature.

A third-year course. The emphasis in the first semester is on reading as communication, with analysis and practice of the techniques of effective reading in French. The emphasis in the second semester is on an understanding of a number of novels and plays selected for their literary excellence and broad appeal. Prerequisite: French 12 or equivalent skill in the language, to be determined by a placement test. Open to freshmen.

Mr. Nicol and Staff.

*Courses 13 and 14 are third-year courses within the meaning of the foreign language requirement for the degree of Bachelor of Arts. Course 14 is offered to meet the needs of the general student; course 13 is designed primarily for the student with particular interest and aptitude for language study who intends to take subsequent courses in literature. Both may be taken for credit.

113. Introduction to French Civilization. Not offered, 1964-65

A selective survey of the history, art, literature and music of France, from the Middle Ages to modern times. An elementary knowledge of French is desirable but not required. Admission is subject to the approval of the instructor. For students who entered Clark before September, 1964, this course may be counted in fulfillment of the general requirement in fine arts. The course may not, however, be counted in fulfillment of the foreign language requirement. Offered in alternate years. Mr. Nicol.

114. General View of French Literature.

An interpretation of the main currents of French literature. Each period is studied by concentrating attention on a limited number of works and authors best bringing to focus the characteristics of the period. Conducted in French. Prerequisite: Grade of B— or higher in French 13 or 14, or the equivalent. Mr. King.

123~~b~~a Advanced Language.

Introduction to the problems of stylistics with a study of selected grammatical topics. Conducted in French. Prerequisite: Grade of B— or higher in French 13b, or the equivalent. Offered in alternate years. Mr. Nicol.

*151a. The Middle Ages and the Renaissance. Not offered, 1964-65.

Emphasis is upon developing an understanding of the philosophical, religious and social attitudes of the Middle Ages and the Renaissance, with due attention to the facts of literary history. Conducted in French. Prerequisite: Grade of B— or higher in French 114, or the equivalent. Offered in alternate years. Mr. King.

*152a. Classicism.

A study of outstanding literary works, drawn principally but not exclusively from the age of Louis XIV, to illustrate the esthetic and intellectual nature of the classical point of view as it persists in the French thought of various periods. Conducted in French. Prerequisite: Grade of B— or higher in French 114, or the equivalent. Offered in alternate years. Mr. Nicol.

*153b. Romanticism and Realism.

A study of outstanding literary works, drawn principally but not exclusively from the late 18th and 19th centuries, to illustrate the esthetic and intellectual climates and the literary techniques generally described as romantic or realistic. Conducted in French. Prerequisite: Grade of B— or higher in French 114, or the equivalent. Offered in alternate years. Mr. Whartenby ~~Mr. Nicol~~.

*154b. The Modern Period. Not offered, 1964-65.

A study of a few outstanding dramatists, novelists and poets to illustrate the highly varied literary attitudes characteristic of 20th century French literature. Conducted in French. Prerequisite: Grade of B— or higher in French 114, or the equivalent. Offered in alternate years. Mr. Nicol.

*For French 151a, 152a, 153b and 154b a certain historical and analytical perspective such as is provided by French 114 is presupposed. These courses are planned so that they need not be taken in chronological order but may be taken at the student's convenience. Attention is given to the social forces and movements underlying the attitudes whose literary manifestations are under study.

Romance Languages 124b. Comparative French and Spanish Phonetics.

Not offered, 1964-65.

The elements of general phonetics. A detailed study of the pronunciation of French and Spanish. Prerequisites: Grade of B— or higher in French 13a or Spanish 13; elementary knowledge of the other language. Advised for majors who plan to teach either language. Offered at the discretion of the department. Mr. Reid.

Romance Languages 250. Special Topics in Romance Languages. Not offered, 1964-65

Romance Languages 270 +271 (Education 270). The Teaching of Romance Languages.

For complete description, see Education 270. (#270 not offered, 1964-65) Mr. Reid and Staff.

COURSES IN SPANISH

11. Elementary.

A course for beginners, including the elements of grammar, pronunciation and conversational patterns, graded readings and the writing of simple Spanish. Three class periods and one to two hours in the language laboratory per week. Laboratory fee. Open to freshmen. Indivisible course. Mr. Barbera + Staff.

12. Intermediate.

A review of the elements and further development of basic literacy and of a balanced mastery of all the communication skills; intensive and extensive reading of texts dealing with Spain and Spanish America. An intensive oral approach is used in the classroom. Three class periods and one or two hours in the language laboratory per week. Laboratory fee. Prerequisite: Spanish 11 or equivalent skill in the language, to be determined by a placement test. Open to freshmen. Indivisible course. Mr. Barbera & Staff.

*13. Oral and Written Spanish.

A third-year course. A rapid intensive review of grammar; the elements of phonetics; exercises in composition and pronunciation; conversational practice. Conducted in Spanish. Admission is subject to the approval of the instructor. Prerequisite: Grade of B— or higher in Spanish 12, or equivalent skill in the language, to be determined by a placement test. Open to freshmen. Offered in alternate years. Two regular class periods, one two-hour session, and one to two hours in the laboratory per week. Laboratory fee.

Mr. King and Mr. Barbera.

*14. Readings in Spanish and Spanish-American Literature.

A third-year course. The first semester is devoted to Spanish-American literature; the second semester to Spanish works. The emphasis in the first semester is on reading as communication, with analysis and practice of the techniques of effective reading in Spanish. The emphasis in the second semester is on the understanding of a number of major works of the literature of Spain. Prerequisite: Spanish 12 or the equivalent skill in the language, to be determined by a placement test. Open to freshmen. Mr. Reid.

*Courses 13 and 14 are third-year courses within the meaning of the foreign language requirement for the degree of Bachelor of Arts. Course 14 is offered to meet the needs of the general student; course 13 is designed primarily for the student with particular interest and aptitude for language study who intends to take subsequent courses in literature. Both may be taken for credit.

114. THE LITERATURE OF SPAIN; THE BEGINNINGS. Not offered, 1964-65.
A detailed study of four outstanding works: *El poema de Mio Cid, El libro de buen amor, La Celestina* and *El Quijote*. Attention is given to political and cultural background. Conducted in Spanish. Prerequisite: Grade of B— or higher in Spanish 13 or 14. or the equivalent. Offered in alternate years. Mr. Barbera.

ROMANCE LANGUAGES 124b AND 250. COMPARATIVE FRENCH AND SPANISH PHONETICS.
For complete description, see Romance Languages 124b under "Courses in French." Mr. Reid.

ROMANCE LANGUAGES 250. SPECIAL TOPICS IN ROMANCE LANGUAGES. Staff.

ROMANCE LANGUAGES 270 (Education 270). THE TEACHING OF ROMANCE LANGUAGES.
For complete description, see Education 270. Mr. Reid and Staff.

Russian

DEPARTMENT FACULTY

Larisa Quincy, M.A., *Assistant Professor of Russian*

UNDERGRADUATE PROGRAM

Courses are offered in Russian language and literature to provide a competent reading and speaking knowledge of the language essential for carrying on advanced study in many fields, to fulfill the language requirement for the degree of Bachelor of Arts and to provide an introduction to Russian civilization.

11. INTRODUCTORY RUSSIAN.
An introduction to the written and spoken language. Three class periods and one language laboratory session per week. Laboratory fee. Open to freshmen. Indivisible course. Mrs. Quincy.

12. INTERMEDIATE RUSSIAN.
Review of Russian grammar. Continued emphasis upon reading and conversation. Three periods and one language laboratory session per week. Laboratory fee. Open to qualified freshmen. Indivisible course. Mrs. Quincy.

13. ADVANCED RUSSIAN. Not offered, 1964-65.
Intensive reading of contemporary and literary sources. Mrs. Quincy.

180. SOVIET LITERATURE. (In English)
A study of those translated works which contribute to an understanding of Soviet society and contemporary Russian intellectual currents. Mrs. Quincy.

SUMMARY OF DEGREES, 1964

Degrees in Course

Bachelor of Arts	203
Bachelor of Bus. Administration	1
Bachelor of Science in Bus. Adm.	18
Bachelor of Science in Bus. Adm. (Evening College)	24
Bachelor of Science in Gen. Studies (Evening College)	14

Degrees in Course

Master of Arts	45
Master of Arts in Educ.	12
Doctor of Philosophy	28
Doctor of Education	1

Honorary Degrees

Doctor of Laws	1
Doctor of Letters	2
Doctor of Humane Letters	1
Doctor of Science	1

DIRECTORIES

The Faculty

Members of the faculty and officers of instruction for 1964-65 are listed alphabetically with their titles, degrees and years at Clark University. Persons no longer on the faculty but who served during the previous year are included. The President and emeriti are listed first.

President

HOWARD BONAR JEFFERSON, Ph.D., LL.D., L.H.D., Litt.D., President. A.B., Denison University, 1923; Ph.D., Yale University, 1929; LL.D., Denison University, 1948, Hillsdale College, 1952, Northwestern University, 1958; L.H.D., Colgate University, 1951, Assumption College, 1956; Litt.D., College of the Holy Cross, 1962. (1946-)

Emeriti

LEROY ALLSTON AMES, A.M., Professor of English Literature, Emeritus. (1908-44)

SAMUEL J. BRANDENBURG, Ph.D., Professor of Economics and Sociology, Emeritus. (1923-50)

JESSE LUNT BULLOCK, Ph.D., Professor of Chemistry, Emeritus. (1926-59)

LORING HOLMES DODD, Ph.D., L.H.D., Professor of English and Art, Emeritus. (1910-49)

ROBERT STANLEY ILLINGWORTH, A.M., Ed.M., Professor of Speech and Drama, Emeritus. (1931-58)

HOMER PAYSON LITTLE, Ph.D., LL.D., Dean of the College and Professor of Geology, Emeritus. (1922-54)

DAVID POTTER, Ph.D., Professor of Biology, Emeritus. (1924-59)

PERCY MARTIN ROOPE, Ph.D., Professor of Physics, Emeritus. (1921-62)

SAMUEL VAN VALKENBURG, Ph.D., Professor of Geography, Emeritus. (1926-29, 1932-62)

*HEINZ WERNER, Ph.D., G. Stanley Hall Professor of Genetic Psychology, Emeritus. (1947-60); Chairman, Board of Directors, Institute of Human Development. (1961-64)

Faculty and Officers of Instruction

VERNON AHMADJIAN, Ph.D., Associate Professor of Botany. A.B., Clark University, 1952; A.M., 1956; Ph.D., Harvard University, 1960. (1959-)

KARL OSCAR EMANUEL ANDERSON, Ph.D., Professor of English. A.B., Harvard University, 1927; A.M., 1928; Ph.D., 1942. (1945-)

ROY STUART ANDERSON, Ph.D., Professor of Physics. A.B., Clark University, 1943; A.M., Dartmouth College, 1948; Ph.D., Duke University, 1951. (1960-)

KARL JOHN RICHARD ARNDT, Ph.D., Professor of German. A.M., Washington University, 1928; Ph.D., The Johns Hopkins University, 1933. (1950-)

ROBERT WILLIAM BAKER, Ph.D., Associate Professor of Psychology. A.B., Hobart College, 1947; Ph.D., Clark University, 1953. (1954-)

GEORGE ANTHONY BALKO, JR., M.B.A., Assistant Professor of Economics and Business Administration. M.E., Stevens Institute of Technology, 1947; M.B.A., New York University, 1952. (1956-)

**Deceased May 14, 1964*

Frederick Emerson Bamford, M.B.A., Assistant Professor of Economics and Business Administration. B.Mus., Boston University, 1954; B.S. in B.A., 1954; M.B.A., 1955. (1961-)

* Raymond Edmond Barbera, Ph.D., Associate Professor of Romance Languages. A.B., Brooklyn College, 1947; A.M., University of Arizona, 1948; Doctor en Letras, Universidad Nacional de Mexico, 1949; Ph.D., University of Wisconsin, 1958. (1953-)

Claude Willis Barlow, Ph.D., Professor of Classics. A.B., Amherst College, 1928; A.M., Indiana University, 1930; Ph.D., Yale University, 1935. (1947-)

Tilton Marshall Barron, B.L.S., Librarian. A.B., Colorado College, 1937; B.L.S., Columbia University School of Library Service, 1940. (1954-)

James Franklin Beard, Jr., Ph.D., Professor of English. A.B., Columbia College, 1940; A.M., Columbia University, 1941; Ph.D., Princeton University, 1949. (1955-)

Robert Nelson Beck, Ph.D., Professor of Philosophy. A.B., Clark University, 1947; A.M., Boston University, 1948; Ph.D., 1950. (1948-)

Helen L. Bee, Ph.D., Assistant Professor of Psychology. A.B., Radcliffe College, 1960; Ph.D., Stanford University, 1964. (1964-)

Clemens E. Benda, M.D., Professor (affiliate) of Psychology. M.D., University of Berlin, 1922. (1958-)

** Joseph C. Bentley, Ph.D., Assistant Professor of Education. B.A., Brigham Young University, 1959; M.A., University of Minnesota, 1960; Ph.D., 1963. (1963-)

Roger Bibace, Ph.D., Associate Professor of Clinical Psychology. A.B., University of British Columbia, 1949; Ph.D., Clark University, 1957. (1957-)

George Athan Billias, Ph.D., Associate Professor of American History. A.B., Bates College, 1948; A.M., Columbia University, 1949; Ph.D., 1958. (1962-)

Charles S. Blinderman, Ph.D., Associate Professor of English. A.B., New York University, 1952; A.M., 1953; Ph.D., University of Indiana, 1957. (1962-)

Daniel Raymond Borg, Ph.D., Assistant Professor of History. A.B., Gustavus Adolphus College, 1953; A.M., Yale University, 1957; Ph.D., 1963. (1961-)

Henry Charles Borger, Jr., Ph.D., Professor of Education, Dean of Students. A.B., (1954-65 Princeton University, 1933; A.M., Columbia University, 1938; Ph.D., 1954. (1950-65)

Martyn J. Bowden, M.A., Assistant Professor of Geography. B.A., University of London, 1957; M.A., University of Nebraska, 1959. (1964-)

Donald Monroe Broverman, Ph.D., Lecturer in Psychology. A.B., Union College, 1952; M.A., Clark University, 1956; Ph.D., 1958. (1964-)

Wesley E. Bryers, Ph.D., Assistant Professor of Geology. A.B., Rutgers University, 1956; Ph.D., Columbia University, 1964. (1961-)

Guy Harvey Burnham, A.M., Instructor in Geography and Cartographer, Graduate School of Geography. A.B., Clark University, 1916; A.M., 1922. (1922-64)

~~George Camougis, Ph.D., Associate Professor~~ (affiliate) of Physiology. B.S., Tufts College, 1952; A.M., Harvard University, 1957; Ph.D., 1958. (1958-64)

Robert Francis Campbell, Ph.D., Professor of American History, Dean of the College. A.B., Yale University, 1939; A.M., Columbia University, 1940; Ph.D., 1947. (1946-57; 1960-)

* - On leave, first semester 1964-65

** - On leave, second semester 1964-65

Ernest Capstack, Jr., Ph.D., Visiting Assistant Professor of Chemistry. B.S., Massachusetts Institute of Technology, 1952; M.A., University of Rhode Island, 1954; Ph.D., Brown University, 1959. (1962-64)

William Hoyt Carter, Jr., Ph.D., Associate Professor of English. A.B., Middlebury College, 1936; A.M., Harvard University, 1938; Ph.D., 1951. (1949-)

James Madison Coffee, Ed.D., Associate Professor of Education. A.B., Duke University, 1949; A.M., Cornell University, 1950; Ed.D., Harvard University, 1957. (1954-)

Morris Harold Cohen, Ph.D., Associate Professor of Government. A.B., University of Chicago, 1939; Ph.D., 1950. (1947-)

Lydia Perry Colby, Registrar. (Feb. 1932-65)

Theresa F. Cooney, Lecturer in Education. B.Ed., Rhode Island College of Education, 1946; M.Ed., Boston University, 1953. (1964-)

Samuel Pendleton Cowardin, III, Ph.D., Associate Professor of Fine Arts. A.B., Harvard University, 1943; A.M., 1948; Ph.D., 1963. (1949-)

Walter Hobson Crockett, Ph.D., Associate Professor of Psychology. A.B., University of Kansas, 1947; A.M., 1949; Ph.D., University of Michigan, 1953. (1957-)

* **Jessie Campbell Cunningham**, A.M., Assistant Professor of English. Ph.B., University of Chicago, 1948; A.M., 1952. (1957-)

Joseph Colcord Curtis, Ph.D., Assistant Professor of Zoology. B.A., Cornell University, 1951; Ph.D., Brown University, 1960. (1963-)

John A. Davies, Ph.D., Assistant Professor of Physics. B.S., University of Maryland, 1953; M.S., 1954; Ph.D., 1960. (1963-)

Tamara Dembo, Ph.D., Professor of Psychology. Ph.D., University of Berlin, 1930. (1953-)

Thomas Joseph Dolphin, A.B., Director of The Evening College, Director of the Summer School. A.B., Rutgers University, 1951. (1957-)

Ralph I. Dorfman, Ph.D., Professor (affiliate) of Chemistry. B.S., University of Illinois, 1932; Ph.D., University of Chicago, 1934. (1955-64)

Juris Draguns, Ph.D., Lecturer in Psychology. B.A., Utica College of Syracuse University, 1954; Ph.D., University of Rochester, 1958. (1963-)

James Stanhope Edwards, A.M., Associate Professor of German. A.B., Brown University, 1936; A.M., 1938. (1947-)

Henry Frandsen, Ph.D., Assistant Professor of Mathematics. B.S., University of Illinois, 1957; M.S., 1959; Ph.D., 1961. (1961-)

Roland John Fuchs, Ph.D., Visiting Associate Professor of Geography. A.B., Columbia University, 1954; A.M., Clark University, 1957; Ph.D., 1958. (1963-64)

Wesley Metcalf Fuller, M.Mu., Assistant Professor of Music. B.Mu., Oberlin Conservatory of Music, 1953; M.Mu., Boston University, 1958. (1963-)

Burton Noble Gates, Ph.D., Research Associate in Botany. A.B., Clark University, 1905; A.M., 1906; Ph.D., 1909. (1954-)

Harold Goodglass, Ph.D., Lecturer in Psychology. A.B., College of the City of New York, 1939; A.M., New York University, 1948; Ph.D., University of Cincinnati, 1951. (1956-)

* - On leave, 1964-65

Daniel Gorenstein, Ph.D., Professor of Mathematics. A.B., Harvard University, 1943; Ph.D., 1950. (1951-64)

Rocheleau Zephirin Granger, Jr., A.M. in Ed., Director of Physical Education for Men. A.B., Clark University, 1938; A.M. in Ed., 1939. (1949-)

Sante Graziani, M.F.A., Associate Professor (affiliate) of Fine Arts. B.F.A., Yale University, 1942; M.F.A., 1948. (1958-)

Gerald N. Grob, Ph.D., Associate Professor of American History. B.S., College of the City of New York, 1951; A.M., Columbia University, 1952; Ph.D., Northwestern University, 1958. (1957-)

Gordon T. Gwinn, Ph.D., Associate Professor of Psychology. A.B., University of Arizona, 1942; Ph.D., Yale University, 1948. (1949-)

George Edward Hargest, M.B.A., Associate Professor of Economics and Business Administration. B.S., Temple University, 1933; M.Ed., 1937; M.B.A., Boston University, 1947. (1942-)

M. Evelyn Harriman, M.A. in Ed., Lecturer in Education. B.S. in Ed., Boston University, 1948; M.A. in Ed., 1950. (1956-)

Edward H. Hastings, A.M., Instructor in English. A.B., Wesleyan University, 1946; A.M., Harvard University, 1947. (1950-52; 60-62; 63-)

Seymour Hayden, Ph.D., Associate Professor of Mathematics. A.B., University of Wisconsin, 1947; A.M., Harvard University, 1948; Ph.D., 1963. (1957-)

Sherman Strong Hayden, Ph.D., Professor of International Relations. A.B., Harvard University, 1930; LL.B., 1933; A.M., Columbia University, 1936; Ph.D., 1942. (1946-)

Earl E. Hays, Ph.D., Associate Professor (affiliate) of Physics. A.B., Allegheny College, 1940; Ph.D., Northwestern University, 1949. (1961-)

Eugene L. Hess, Ph.D., Professor (affiliate) of Chemistry. B.Ch., University of Minnesota, 1938; M.S., University of Wisconsin, 1942; Ph.D., 1947. (1964-)

Serena Sue Hilsinger, A.B., Instructor in English. A.B., Douglass College, 1959; Ph.D., University of Connecticut, 1964. (1962-)

Guy Tilghman Hollyday, M.A., Assistant Professor of German. A.B., Princeton University, 1952; M.A., Johns Hopkins University, 1959. (1964-)

M. Hazel Hughes, M.Ed., Dean of Women, Director of Physical Education for Women. B.Ed., Clark University, 1944; M.Ed., Boston University, 1949. (1942-)

Robert Mooers Hyde, A.M., Executive Vice President. A.B., Rutgers University, 1947; A.M., University of Pennsylvania, 1949. (1954-)

Vernon Jones, Ph.D., Professor of Educational Psychology. B.A., University of Virginia, 1920; M.A., 1920; M.A., Columbia University, 1924; Ph.D., 1926. (1926-)

Henry Donaldson Jordan, Ph.D., Professor of English History. A.B., Harvard University, 1918; A.M., 1922; Ph.D., 1925. (1931-)

Bernard Kaplan, Ph.D., Professor of Psychology. A.B., Brooklyn College, 1948; A.M., Clark University, 1950; Ph.D., 1953. (1955-)

Robert W. Kates, Ph.D., Assistant Professor of Geography. A.M., University of Chicago, 1960; Ph.D., 1962. (1962-)

Gerson Kegeles, Ph.D., Professor of Chemistry. B.S., Yale University, 1937; Ph.D., 1940. (1951-)

John F. Kennison, Ph.D., Assistant Professor of Mathematics. Ph.D., Harvard University, 1963. (1963-)

** Frederick W. Killian, LL.B., Associate Professor of Sociology. LL.B., New York University, 1925; A.B., 1934. (1947-)

Jesse Fannin King, A.M., Associate Professor of Romance Languages. A.B., Pomona College, 1936; A.M., Harvard University, 1937. (1946-)

Edward L. Klaiber, M.D., Lecturer in Psychology. A.B., Syracuse University, 1952; M.D., State University of New York, 1956. (1964-)

Roger P. Kohin, Ph.D., Assistant Professor of Physics. B.Sc., Notre Dame University, 1953; Ph.D., University of Maryland, 1961. (1962-)

John T. Krumpelmann, Ph.D., Visiting Professor of German. A.B., Tulane University, 1915; A.M., 1916; A.M., Harvard University, 1917; Ph.D., 1924. (1964-) Jan. to June 1964

Donald Max Krus, Ph.D., Associate Professor of Psychology. B.A., Drew University, 1949; A.M., Clark University, 1951; Ph.D., 1957. (1958-)

Connor Lazarov, A.M., Instructor in Mathematics. B.S., University of Michigan, 1959; A.M., Harvard University, 1960. (1964-)

Dwight Erwin Lee, Ph.D., Jacob and Frances Hiatt Professor of European History, Dean of the Graduate School. A.B., University of Rochester, 1921; A.M., 1922; Ph.D., Harvard University, 1928. (1927-)

Herbert Lipton, Ph.D., Assistant Professor (affiliate) of Psychology. A.B., Rutgers University, 1949; A.M., Clark University, 1951; Ph.D., 1954. (1956-)

Arthur H. Martin, A.B., Instructor in English. A.B., Clark University, 1962. (1964-)

James Ackley Maxwell, Ph.D., Professor of Economics. A.B., Dalhousie University, 1921; A.M., Harvard University, 1923; Ph.D., 1927. (1924-)

Joseph H. McFarland, Ph.D., Assistant Professor (affiliate) of Psychology. A.B., Brandeis University, 1955; A.M., Clark University, 1957; Ph.D., 1960. (1961-64)

* Frederick Eugene Melder, Ph.D., Professor of Economics. B.B.A., University of Washington, 1926; M.A., 1931; Ph.D., University of Wisconsin, 1936. (1937-46; 1950-)

George Henry Merriam, Ph.D., Lecturer in American History, Director of Admissions. A.B., Clark University, 1944; A.M., Brown University, 1947; Ph.D., Clark University, 1961. (1952-64) to Feb. 1964

David M. Moriarty, M.D., Professor (affiliate) of Clinical Psychology. M.D., Boston University, 1947. (1960-)

John Hubert Muller, Ph.D., Associate Professor of Physics. A.B., Princeton University, 1949; M.S., Michigan State University, 1954; Ph.D., 1958. (1962-64)

Raymond Edward Murphy, Ph.D., Professor of Economic Geography. B.S., Missouri School of Mines and Metallurgy, 1923; M.S., University of Wisconsin, 1926; Ph.D., 1930. (1946-)

William Robert Nes, Ph.D., Associate Professor of Biochemistry. B.A., University of Oklahoma, 1946; M.S., University of Virginia, 1948; Ph.D., 1950. (1958-64)

Howard White Nicholson, Ph.D., Professor of Economics. B.A., Oberlin College, 1942; A.M., Harvard University, 1948; Ph.D., 1950. (1958-)

** Theodore Nicol, Ph.D., Associate Professor of Romance Languages. A.B., Clark University, 1926; A.M., Harvard University, 1928; Ph.D., 1933. (1946-)

* - On leave, 1964-65

** - On leave, second semester 1964-65

Rudolph Fink Nunnemacher, Ph.D., Professor of Zoology. B.S., Kenyon College, 1934; A.M., Harvard University, 1935; Ph.D., 1938. (1939-)

Philip Gilbert Olson, Ph.D., Associate Professor of Sociology. A.B., University of Arizona, 1954; A.M., 1956; Ph.D., Purdue University, 1959. (1961-)

Ralph Edward Packard, M.A., Visiting Assistant Professor of Education. B.S., Brigham Young University, 1960; M.A., University of Minnesota, 1962. (Feb 1965)

Myrna Schmidt Pearson, A.M., Assistant Professor of Chemistry. A.B., University of Pennsylvania, 1958; A.M., Columbia University, 1959. (1963-64)

Leslie Phillips, Ph.D., Professor (affiliate) of Clinical Psychology. A.M., University of Chicago, 1944; Ph.D., 1949. (1946-)

Larisa Quincy, M.A., Assistant Professor of Russian. (1964-) B.A., University of California, Los Angeles, 1961; M.A., 1962.

Relly Raffman, A.M., Associate Professor of Music. A.B., Dartmouth College, 1943; A.M., Columbia University, 1949. (1954-)

Richard Anthony Ray, A.M.Ed., Instructor in Romance Languages. A.B., St. Michael's College, 1962; M.A.Ed., Clark University, 1964. (1964-)

J. Richard Reid, Ph.D., Professor of Romance Languages. A.B., Swarthmore College, 1935; A.M., Harvard University, 1936; Ph.D., 1943. (1944-)

John Theodore Reynolds, Ph.D., Associate Professor of Microbiology. B.S., Boston College, 1951; M.S., University of Massachusetts, 1954; Ph.D., 1962. (1956-)

Harris Rosenkrantz, Ph.D., Professor (affiliate) of Biology. A.B., Brooklyn College, 1943; M.S., New York University, 1946; M.S., Cornell Medical College, 1948; Ph.D., Tufts Medical School, 1952. (1959-)

Mordecai Samuel Rubin, Ph.D., Assistant Professor of Romance Languages. A.B., Rutgers University, 1952; Ph.D., University of Maryland, 1961. (1962-)

Zalman Rubinstein, Ph.D., Associate Professor of Mathematics, M.S., University of Jerusalem, 1958; Ph.D., University of Maryland, 1962. (1964-)

Carolyn J. Ryan, Ph.D., Assistant Editor of "Economic Geography" and Lecturer in Geography. B.S.Ed., State College at Bridgewater, Massachusetts, 1960; M.A., Clark University, 1963; Ph.D., 1964. (1964-)

Sebastiano Santostefano, Ph.D., Associate Professor of Psychology. B.S., University of Connecticut, 1953; M.S., Pennsylvania State University, 1954; Ph.D., 1957. (1964-)

Donald T. Savage, M.S., Assistant Professor of Economics. B.B.A., University of Massachusetts, 1960; M.S., University of Wisconsin, 1961. (1964-)

Hans Jürgen Schlütter, Ph.D., Assistant Professor of German. Ph.D., Universitat Kiel, 1961. (1963-64)

Neil Rolf Schroeder, Ph.D., Assistant Professor of English. A.B., Brown University, 1952; Ph.D., Yale University, 1962. (1960-)

Arthur Joseph Serra, B.S., Assistant in Physical Education. B.S., Springfield College, 1956. (1960-)

Dayton Dorris Shepherd, A.M., Lecturer in Education. B.S., Southwest Missouri State College, 1946; A.M., Yale University, 1950. (1954-)

Clifford K. Shipton, Ph.D., Professor (affiliate) of American History. B.S., Harvard University, 1926; A.M., 1927; Ph.D., 1933. (1961-)

Rodman Eldredge Snead, Ph.D., Assistant Professor of Geography. B.A., University of Virginia, 1953; A.M., Syracuse University, 1955; Ph.D., Louisiana State University, 1963. (1961-)

ROBERT JOHN STAIRS, B.S., Assistant in Physical Education. B.S., University of Rhode Island, 1956. (1959-)

JOHN SUNAPEE STUBBE, Ph.D., Associate Professor of Mathematics. B.S., University of New Hampshire, 1941; M.S., Brown University, 1942; Ph.D., University of Cincinnati, 1945. (1949-)

THOMAS TAMOTSU SUGIHARA, Ph.D., Professor of Chemistry. A.B., Kalamazoo College, 1945; S.M., University of Chicago, 1951; Ph.D., 1952. (1953-)

SANG C. SUH, M.A., Assistant Professor of Economics. B.A., Clark University, 1958; M.A., 1959. (1964-)

STANLEY SULTAN, Ph.D., Associate Professor of English. A.B., Cornell University, 1949; A.M., Boston University, 1950; Ph.D., Yale University, 1955. (1959-)

BRIAN SUTTON-SMITH, Ph.D., Visiting Associate Professor of Psychology. M.A., University of New Zealand, 1947; Ph.D., 1953. (1963-64)

ERIKA ELISABETH THEOBALD, Ph.D., Assistant Professor of German. Ph.D., University of Vienna, 1948. (1964-)

EDWARD N. TRACHTENBERG, Ph.D., Associate Professor of Chemistry. A.B., New York University; A.M., Harvard University, 1951; Ph.D., 1953. (1958-)

ALDO PETER TRUANT, Ph.D., Professor (affiliate) of Biology. A.B., University of Western Ontario, 1944; Ph.D., Yale University. 1949. (1959-)

ROGER CARLETON VAN TASSEL, Ph.D., Associate Professor of Economics. A.B., Union College, 1947; A.M., Cornell University, 1950; Ph.D., Brown University, 1956. (1954-)

ANTHONY VARJABEDIAN, M.D., Lecturer in Psychology. A.B., Clark University, 1941; M.D., Yale University, 1944. (1954-)

SEYMOUR WAPNER, Ph.D., G. Stanley Hall Professor of Genetic Psychology. A.B., New York University, 1939; A.M., University of Michigan, 1940; Ph.D., 1943. (1948-)

HENRY JOHN WARMAN, Ph.D., Professor of Geography. B.S. in Ed., Bloomsburg State Teachers College, 1932; Ed.M., Temple University, 1938; Ph.D., Clark University, 1945. (1943-)

JOSEPH WEINREB, M.D., Professor (affiliate) of Psychology. A.B., Vanderbilt University, 1931; M.D., 1935. (1947-)

WEN-YANG WEN, Ph.D., Assistant Professor of Chemistry. Ph.D., University of Pittsburgh, 1958. (1962-)

HARRY ALLEN WHARTENBY, JR., Ph.D., Assistant Professor of Romance Languages. B.A., Temple University, 1950; M.A., University of North Carolina, 1957; Ph.D., 1962. (1963-)

JEFFERSON A. WHITE, Ph.D., Assistant Professor of Philosophy. B.A., Baylor University, 1952; B.D., Yale University, 1957; A.M., Yale University, 1960; Ph.D., 1964. (1961-)

MORTON WIENER, Ph.D., Professor of Psychology. B.S., College of the City of New York, 1949; M.S., 1950; Ph.D., University of Rochester, 1953. (1957-)

JOACHIM F. WOHLWILL, Ph.D., Associate Professor of Psychology. A.B., Harvard College, 1949; Ph.D., University of California, 1957. (1958-)

PETER H. WOLFF, M.D., Lecturer in Psychology. M.D., University of Chicago, 1950. (1961-)

ALLEN M. ZWICKEL, Ph.D., Associate Professor of Chemistry. A.B., Cornell University, 1956; Ph.D., University of Chicago, 1959. (1961-)

Academic Boards and Committees, 1963-64

The President and Executive Vice President are *ex officio* members of all boards and committees.

PERSONNEL AND ORGANIZATION: Jefferson, *chairman,* Beck, *vice chairman and secretary,* Campbell, Crockett, Gorenstein, Sherman Hayden, Lee, Maxwell and Nunnemacher.

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CREDENTIALS: Lee, *chairman,* Sherman Hayden, Jones, Nicholson, Murphy, Nunnemacher, Sugihara and Wapner.

PROFICIENCY IN FOREIGN LANGUAGES: Arndt, Nicol and a representative of the student's major department.

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COLLEGE BOARD: Borger, *chairman,* Campbell, Crockett, Edwards, Seymour Hayden and Hughes.

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ATHLETICS: Warman, *chairman,* Borger, Granger, Hughes, Maxwell and Stubbe.

SCHOLARSHIPS: Sherman Hayden, *chairman,* Barron, Borger, Campbell, Merriam, (first semester), Dolan and Van Tassel.

EVENING COLLEGE BOARD: Dolphin, *chairman,* Carter, Coffee, Hargest, Kaplan, Killian, Lee, Melder, Merriam (first semester).

LIBRARY: Grob, *chairman,* Ahmadjian, Cowardin and Raffman.

Appointments From Clark University Funds, 1963-64

Alumni Association Fellow

A. Harvey Baker, Psychology, A.B., Harvard College, 1958; M.Ed., Harvard University, 1960.

Joseph F. Donnelly Fellows

Hiroshi Baba, Chemistry, B.Sc., University of Tokyo, 1958.

Richard D. Hecock, Geography, A.B., Albion College, 1960.

Herbert I. James, Chemistry, B.S., Hampton Institute, 1955.

Nabil M. Kaylani, History, Government and International Relations, A.B., American University of Beirut, 1962.

Demetrious A. Mavromatis, History, Government and International Relations, LL.B., Athens University, 1958.

Israel Nachshon, Psychology, A.B., Bar Illan University, 1962.

William B. O'Connell, Economics and Sociology, B.S. in B.A., Northeastern University, 1962.

Ransford Palmer, Economics and Sociology, B.S. in B.A., Marquette University, 1961.

Austin S. Garver Scholars

David G. Arey, Geography, A.B., Denison University, 1959.

Michele M. Hilden, History, Government and International Relations, A.B., Emmanuel College, 1963.

Peter H. Puxley, Economics and Sociology, A.B., Dalhousie University, 1963.

Roger A. Roberge, Geography, B.A., Assumption College, 1962.

Jane A. Wirth, History, Government and International Relations, A.B., Barnard College, 1963.

Charles H. Thurber Scholar

Gerald A. Winer, Psychology, B.S., Trinity College, 1963.

Appointments From Other Funds, 1963-64

National Defense Education Act—Title IV Fellows

Donald Q. Cannon, History, Government and International Relations, A.B., University of Utah, 1961; M.A., ibid., 1962.

Lawrence J. Kazura, History, Government and International Relations, B.A., Queens College, 1962.

John F. Meyers, History, Government and International Relations, A.B., University of Minnesota, 1963.

Donn M. Nibblett, History, Government and International Relations, A.B., Whittier College, 1963.

Barbara L. Ross, History, Government and International Relations, B.A., Clark University, 1960.

Robert N. White, History, Government and International Relations, A.B., Brigham Young University, 1962.

John A. Worsley, History, Government and International Relations, A.B., Brown University, 1956.

National Institute Of Mental Health

Nelson M. Butters, Psychology, A.B., Boston University, 1960; M.A., Clark University, 1962.

Bruce Denner, Psychology, B.S., City College of New York, 1960; M.A., Clark University, 1961.

Harold Kellner, Psychology, B.S., Harvard University, 1959; M.A., Clark University, 1962.

Bernhard Kempler, Psychology, A.B., Brandeis University, 1958; M.A., Clark University, 1962.

Alice T. O'Malley, Biology, A.B., Anna Maria College, 1958.

Willis F. Overton, Jr., Psychology, A.B., Boston University, 1960; M.A., ibid., 1961.

George R. Rand, Psychology, B.Sc., City College of New York, 1959.

Melvyn Schnall, Psychology, B.S., Union College, 1959; M.A., Clark University, 1961.

Dean F. Stevens, Biology, A.B., Boston University, 1948; A.M., ibid., 1950.

Csaba Sziklai, Psychology, University of Law and Political Science (Hungary), 1956; A.M., Clark University, 1961.

Leon W. Teft, Psychology, B.A., University of Bridgeport, 1961.

National Science Foundation

George R. Allen, Physics (Summer Fellow), B.S., Muhlenberg College, 1962.

Marcus J. Farrell, Biology (Summer Fellow), A.B., St. Anslem's College, 1960; M.A., Clark University, 1963.

Anna M. Guyette, Psychology (Cooperative Graduate Fellow), A.B., University of New Hampshire, 1959; M.A., ibid., 1961.

Peter D. Yedinak, Physics (Summer Fellow), B.Sc., Union College, 1962.

United States Steel Foundation

Carolyn G. Ryan, Geography. B.S.Ed., Bridgewater State College, 1960.

Teaching Assistants and Teaching Assistant Scholars, 1963-64

Ames, David L., Geography, A.B., George Washington University, 1961; M.A., ibid., 1963.

Baum, Nancy M., Education, A.B., Clark University, 1963.

Baumann, Duane D., Geography, B.S.Ed., Illinois State Normal University, 1962; M.A., ibid., 1963.

Bedding, David R., Physics, B.S., Fairfield University, 1963.

Bierlmaier, August, Mathematics, A.B., Clark University, 1963.

Brams, Marvin, Economics and Sociology, B.S. in B.A., Northwestern University, 1959; M.B.A., ibid., 1962.

Burnham, Linda, Biology, B.S., University of Massachusetts, 1963.

Cobb, Mrs. Barbara D., History, Government and International Relations, A.B., Wellesley College, 1933; A.M., Tufts University, 1934.

DeFeudis, Francis V., Biology, B.S., Miami University, 1961.

Fleming, Daniel J., Mathematics, A.B., Clark University, 1962.

Freidland, Harvey E., (Sem. I), Chemistry, A.B., Brooklyn College, 1963.

Gannutz, Theodore F., Biology, A.B., University of Connecticut, 1963.

Harting, Carol R., History, Government and International Relations, A.B., Anderson College, 1960; M.A., Clark University, 1962.

Harvey, Andrew S., Economics and Sociology, A.B., University of Maine, 1961; A.M., ibid., 1963.

Hsu, Ying-Chieh, Physics, A.B., Clark University, 1963.

Hufault, Armand D., Physics, A.B., Clark University, 1962.

Kelley, George T., Economics and Sociology, A.B., Holy Cross College, 1952; A.M., Boston College, 1960.

Lee, Thomas F., Biology, A.B., Holy Cross College, 1959.

Lewis, Constance L., B.S., Simmons College, 1963.

Lindblad, Karl F., Mathematics, A.B., Clark University, 1962.

Lo, Mee Lee, Chemistry, A.B., Clarke College, 1963.

Lopriore, John, Biology, B.S., Suffolk University, 1962.

McGivney, Raymond F., Mathematics, A.B., Clark University, 1962.

McGonagle, John F., Economics and Sociology, A.B., University of Maine, 1963.

Meleen, Nathan H., Geography, B.A., San Jose State College, 1962.

Nadeau, Marcel M., Physics, B.S., Bradford Durfee College of Technology, 1963.

Pannesi, Patricia, Biology, B.S.Ed., Bridgewater State College, 1961.

Pedusey, Frances L., Education, A.B., University of Vermont, 1956.

Perry, Robert J., Mathematics, A.B., Clark University, 1962.

Raab, Karl H., Chemistry, A.B., University of Vermont, 1959.

Ray, Richard A., Education, A.B., St. Michael's College, 1962.

Rhee, Tong Chin, History, Government and International Relations, A.B., Seoul National University, 1959; M.P.A., Lehigh University, 1961; M.A., ibid., 1963.

Roberts, Thomas L., Biology, A.B., Talladega College, 1957; M.S., Trinity University, 1961.

Rumford, Jane B., Chemistry, B.S., Monmouth College, 1963.

Shivasubramanya, S., Physics, B.S., Mysore University, 1956; M.S., Karnatak University, 1962.

Sia, Anna Chin, Mathematics, B.S. Com. Ed., 1955, University of the East; B.S.E., ibid., 1957; M.A.Ed., Clark University, 1962.

Smith, Stanley, Education, A.B., Washington College, 1962.

Tai, Mei-sheng, Chemistry, B.S., National Taiwan University, 1962.

Thompson, Bryan, Geography, A.B., University of Toronto, 1958.

Wang, Jen-rong, Biology, B.S., National Taiwan University, 1962.

Wasserman, Bernard, Chemistry, B.S., City College of New York, 1963.

Winer, Gerald A., Psychology, B.S., Trinity College, 1963.

Wittstruck, Thomas A., Chemistry, B.S., University of Florida, 1956.

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Roland A. Erickson, A.M. (1951-)	Worcester, Mass.
A. D. Ross Fraser, A.B., L.H.D. (1960-)	Rome, New York
Jacob Hiatt, A.M. (1955-)	Worcester, Mass.
John Jeppson, M.B.A., Sc.D., (1948-)	Worcester, Mass.
Robert H. Loomis, A.M. (1936-)	West Newton, Mass.
Richard W. Mirick, LL.B. (1957-)	Worcester, Mass.
Joseph C. Molder, M.B.A. (1954-)	Worcester, Mass.

Term Members

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Frederic W. Howe, Jr., A.B. (1962-)	New Braintree, Mass.
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Robert A. Miller, A.B., C.P.A. (1963-)	Worcester, Mass.
Stephen T. Riley, Ph.D. (1963-)	Weston, Mass.
Constance E. Smith, Ph.D. (1963-)	Cambridge, Mass.
Elwyn C. Hale (1963-)	Piedmont, Calif.
Ben H. Bagdikian, A.B., L.H.D., Litt.D. (1964-)	Washington, D. C.
Fairman C. Cowan, LL.B. (1964-)	Worcester, Mass.
Mrs. Robert H. Goddard, A.M., Sc.D. (1964-)	Worcester, Mass.

Members Elected by the Alumni

J. Warren Nystrom, Ph.D. (1960-)	Arlington, Va.
Clyde F. Benner, A.M. (1961-)	Little Silver, N. J.
Lloyd Anderson, LL.B. (1962-)	Worcester, Mass.
C. Harry Kuniholm, A.B. (1962-)	Gardner, Mass.
Samuel N. Behrman, A.M., Litt.D. (1962-)	New York, N. Y.
Chester Bland, A.M. (1963-)	West Hartford, Conn.
John J. Singer, Jr., Ph.D. (1964-)	Nashua, N. H.

Emeriti

Frank L. Adams, A.B. (1938-1961)	Fort Lauderdale, Fla.
Harry C. Coley (1948-1962)	West Boylston, Mass.
Francis H. Dewey, Jr., LL.B. (1934-1962)	Worcester, Mass.
Samuel H. Dolbear, Sc.D. (1940-1961)	New York, N. Y.

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John E. Snow, *Manager, Printing Department*

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CLARK UNIVERSITY

SEVENTY-FOURTH

ANNUAL COMMENCEMENT

CAMPUS GREEN

SUNDAY, JUNE 7, 1964

WORCESTER, MASSACHUSETTS

ORDER OF EXERCISES

Preludes and Processional

17th Century Ceremonial Music for Brass

Gabrielli, Reiche, Pezel

Invocation — THE REVEREND EARNEST E. EELLS
North Sebago, Maine

Welcome by the President — DR. HOWARD B. JEFFERSON

Commencement Address — WILLIAM V. SHANNON
Washington Correspondent
and Columnist
The New York Post

Conferring of Degrees

Alma Mater

Fiat Lux (Stanzas I and III)

Benediction — THE REVEREND MR. EELLS

Recessional

17th Century Tower Music for Brass

Gabrielli, Schmid, Pezel

Music: Brass Ensemble

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*_As of June 9, 1963_

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Departmental Honors

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**As of June 9, 1963*

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**As of June 9, 1963*

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ALBERT WHITE RICE Presented by Tilton Marshall Barron	*Doctor of Laws*
WILLIAM VINCENT SHANNON Presented by Henry Donaldson Jordan	*Doctor of Letters*

FIAT LUX

Words by
E. L. Clarke, '09

Music by
R. F. Fletcher, '10

Oh Clark! Thy sons have gathered
To thee from east and west,
To pledge with deep devotion
The college they love best.
They love thy halls and campus,
Each comrade of their heart
The memories, aims, traditions
That make thee what thou art.

Hail Clark! We who revere thee
Salute thee with a cheer!
While we shall live we'll praise thee.
Oh college without peer!
Only with life shall perish
Thy name and memory bright,
Thy sons shall ever cherish
The scarlet and the white!

Godspeed our Alma Mater,
And may she ever be
The leader of the leaders,
The freest of the free!
Her sons shall still press onward,
The foremost in the fight,
Till everywhere her watchword
Shall ring, "Let there be light!"

CLARK

SUMMER

CLARK UNIVERSITY BULLETIN

SCHOOL

1964

INTERSESSION
June 8 to June 27

SUMMER SESSION
June 29 to August 15

CALENDAR

Summer, 1964

June

8 Monday, Intersession Registration 9 to 12 noon
First class meeting 2 p.m.

24 Wednesday, Registration for evening classes

27 Saturday, Examinations for Intersession courses, 9 to 12 noon

29 Monday, Summer Session Registration for day classes 9 to 12 noon
Evening classes begin 6 p.m.

30 Tuesday, day classes begin 8 a.m.

July

21 Tuesday, Examinations in double courses concluding after first three weeks

22 Wednesday, Beginning of double courses of second three weeks

August

12 Wednesday, No day classes
Examinations for evening classes meeting at 6 p.m.—7 to 10 p.m.

13 Thursday, Examinations for classes meeting at 8 a.m.—9 to 12 noon
Examinations for classes meeting at 6 p.m.—7 to 10 p.m.

14 Friday, Examinations for classes meeting at 9:15 a.m.—9 to 12 noon
For evening classes meeting at 8 p.m.—7 to 10 p.m.

15 Saturday, Examinations for classes meeting at 10:30 a.m.—9 to 12 noon
For classes meeting at 11:45 a.m.—2 to 5 p.m.

JUNE

SUN	MON	TUE	WED	THU	FRI	SAT
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

JULY

SUN	MON	TUE	WED	THU	FRI	SAT
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

AUGUST

SUN	MON	TUE	WED	THU	FRI	SAT
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

Clark University
Summer School

Worcester, Massachusetts

Intersession, June 8 to June 27
Summer Session, June 29 to August 15

1964

CLARK UNIVERSITY BULLETIN

Number 277 April, 1964

The Clark University Bulletin is published six times a year, in April, twice in July, twice in September and December. Second-class postage paid at Worcester, Massachusetts. Correspondence may be addressed to: The Summer School, Clark University, 950 Main Street, Worcester, Massachusetts 01610.

A Unique Opportunity to Learn

Small groups of students working in courses they enjoy typify the educational opportunity offered by the Clark University Summer School. Superior teaching and interested students combine to make for effective learning. Active participation by the students in class discussions is encouraged.

Courses are available in the arts and sciences at both the graduate and undergraduate level, permitting students to accelerate their work toward a degree. In addition, the selection of courses in the modern languages permits current and prospective graduate students to better prepare themselves for graduate study.

There is a variety of courses available for teachers who seek professional advancement. The selection of subject matter courses is excellent, and several education courses will be offered.

Evening classes in liberal arts and business will be offered for those who have part time summer jobs during the day and wish to gain academic credit at the same time, as well as for those who are continuing their studies in the Clark University Evening College.

Clark University has an excellent library employing the open shelf system with an opportunity for unlimited browsing of the large and varied collection of modern books, professional periodicals and an unusually large map collection.

Clark is ideally located for summer study. The summer climate is excellent and the University is near numerous cultural and recreational facilities. Trips to Tanglewood, to ball games in Boston, and swimming in the nearby ponds have been very popular. The fine tennis courts will be available for use by Summer School students.

Special Programs

ECONOMICS WORKSHOP FOR SECONDARY SCHOOL SOCIAL STUDIES TEACHERS

Henry C. Borger, Jr., *Dean of Students and Professor of Education*
John D. Coupe, *Associate Professor of Economics, University of Maine*
Roger C. Van Tassel, *Associate Professor of Economics*

This workshop will identify the chief areas of economic analysis of significance for teachers of history and the social studies in the junior and senior high schools. It will focus attention especially upon those areas of public policy which are particularly relevant for an understanding of recent United States history and politics.

Although the major emphasis will be on areas of economic analysis, such as the function of the market mechanism and the interrelationship of various components of the economic system, consideration will be given to the teaching of these concepts in the secondary schools.

A number of full-tuition scholarships is available.

Monday, July 6 through Friday, July 31.
Mornings: 8:30–10:15 and three afternoons a week, 2:30–4:00 p.m.

INDEPENDENT STUDY

The following courses will be offered on an experimental basis this summer and will combine independent study with some formal classroom work, depending on the instructor and the material to be covered. They will meet initially at the time mentioned in the course description section. Thereafter meetings or individual conferences will be scheduled as needed. These courses are not open to freshmen and permission of the instructor is required of all registrants.

INTERSESSION

Special Studies in Yeats and Joyce—Mr. Sultan.
Special Topics in Italian Renaissance Art—Mr. Cowardin.
The Negro in American Life—Mr. Campbell.
Psychology of Language—Mr. Kaplan.

SUMMER SESSION

The Idea of History—Mr. Borg.
Directed Studies in Esthetics—Mr. White.
Psychology of Values and Valuing—Mr. Weir.
Seminar on Theoretical Issues in Psychology—Mr. Kaplan

Degrees and Credits

All courses offered are accepted at Clark for credit toward the degrees of Bachelor of Arts and Bachelor of Science in Business Administration, or either of the Evening College degrees unless specifically limited to one of the degrees as stated in the course description. Many courses in the Summer School count toward the degrees of Master of Arts, Master of Arts in Education, and Doctor of Philosophy. Approval should, however, be obtained in advance from a student's major department.

The degree of Master of Arts may be obtained in certain fields by completing satisfactorily a full-time program for five summers. It is best for students interested in such a program to discuss their plans directly with the Chairman of the department concerned. Graduate students formally registered in the Summer School may, with the approval of their major department, enroll in thesis courses under the direction of regular members of the staff other than those listed in the Summer School Bulletin.

Each single course offered in the Summer School is equivalent to a half-year course of the academic year and yields three semester hours of credit. The double courses in the languages, history and mathematics which meet for two lecture periods a day for six and one-half weeks are equivalent to year courses (six semester hours credit).

Intersession courses meet for two 70 minute periods at 9:00 a.m. and at 2:00 p.m., Monday through Friday. Summer Session courses during the day meet for one 70 minute period Monday through Friday. Double courses meet for two 70 minute periods five days a week. Evening classes meet for 110 minutes on Monday, Wednesday and Friday evenings. Exceptions to the above time schedule are listed under course descriptions.

A student may carry in a normal program one course in the Intersession (three semester hours) and two courses in the Summer Session (six semester hours). Permission to carry an additional course may be granted only in exceptional cases if approved in writing prior to registration. Course changes after the third day of classes must be approved by the Director.

One transcript of a student's Summer School record is available free of charge, and application for it should be made in the Summer School Office. There is a $1.00 fee for each additional transcript.

TUITION AND FEES

A matriculation fee of $5.00 is required of all students entering Clark University for the first time. The tuition for each three semester hour course is $105.00. Persons who wish to audit a course without receiving credit register and pay tuition at the stated rate. However, students taking two courses for credit during the Summer Session may audit a third course without additional cost. Tuition and fees must be paid in the Summer School Office immediately following registration. A fee for late registration of $3.00 must be paid by students who fail to complete registration within the official Registration Period.

WITHDRAWALS AND REFUNDS

Students who withdraw with the approval of the Director of the Summer School may expect a refund of tuition paid in full on the following schedule:

Intersession		*Summer Session*	
June 8, 9	full refund	June 29, 30, July 1, 2, 3	full refund
June 10, 11	two-thirds	July 6, 7, 8	two-thirds
June 12	one-third	July 9, 10	one-third

LIVING FACILITIES AND COSTS

Rooms will be available for both men and women in the new University dormitories but reservations should be made promptly on or before June 1. Room rent is $10.00 per week for single room occupancy and $7.50 for double. A room and key deposit of $10.00 is required in advance to hold a room. This deposit is not part-payment for the rent. The $10.00 will be returned in full if the room is undamaged when the key is returned.

FOOD SERVICE INFORMATION

Clark University will offer breakfast and lunch facilities in the Snack-Bar, Jefferson Hall. The Snack-Bar will be opened Monday through Friday from 7:30 a.m. to 2:30 p.m. beginning June 8 through August 14.

VETERANS

Veterans attending the 1964 Summer School should present their supplemental Certificate of Eligibility at the Bursar's Office not later than Friday of the first full week of the term. The Director of the Summer School should be consulted when unusual or unexpected situations arise.

Veterans are reminded that Certificates of Eligibility held during the Spring Semester 1964 do not apply to the Summer School and that a new application must be completed for the course of summer study.

ELIGIBILITY FOR COURSES

Courses beginning with "1" are open to all undergraduates except freshmen. Courses preceded by an "F" are open to freshmen. Courses beginning with "2" are open to advanced undergraduates and graduate students. Teachers working toward degrees or credits in Education should consult with Professor Vernon Jones, Chairman of the Department of Education.

ADMINISTRATIVE OFFICERS OF THE UNIVERSITY

Howard B. Jefferson, *President*
Robert M. Hyde, *Executive Vice President*
Robert F. Campbell, *Dean of the College*
Thomas J. Dolphin, *Director of the Summer School*

SUMMER SCHOOL STAFF

(All are Clark University Faculty members unless otherwise indicated)

Merritt G. Abrash, Ph.D., *Visiting Lecturer, Rensselaer Polytechnic Institute*
Karl O. E. Anderson, Ph.D., *Professor of English*
Karl J. R. Arndt, Ph.D., *Professor of German*
Robert W. Baker, Ph.D., *Associate Professor of Psychology*
George A. Balko, Jr., M.B.A., *Assistant Professor of Business Administration*
Raymond E. Barbera, Ph.D., *Associate Professor of Romance Languages*
James F. Beard, Ph.D., *Professor of English*
Robert N. Beck, Ph.D., *Professor of Philosophy*
Joseph Bentley, Ph.D., *Assistant Professor of Educational Psychology*
George A. Billias, Ph.D., *Associate Professor of American History*
Charles S. Blinderman, Ph.D., *Associate Professor of English*
Daniel R. Borg, Ph.D., *Assistant Professor of History*
Henry C. Borger, Jr., Ph.D., *Dean of Students and Professor of Education*
Wesley E. Bryers, A.B., *Instructor in Geology*
Robert F. Campbell, Ph.D., *Dean of the College and Professor of American History*
William H. Carter, Jr., Ph.D., *Associate Professor of English*
Morris H. Cohen, Ph.D., *Associate Professor of Government*
John D. Coupe, Ph.D., *Associate Professor of Economics, University of Maine*
Samuel P. Cowardin, III, Ph.D., *Associate Professor of Fine Arts*
Walter H. Crockett, Ph.D., *Associate Professor of Psychology*
James S. Edwards, M.A., *Associate Professor of German*
Raymond F. Frink, M.A., *Visiting Lecturer in Education*
Gerald N. Grob, Ph.D., *Associate Professor of American History*
George E. Hargest, M.B.A., *Associate Professor of Economics and Business Administration*
Richard J. Hruby, M.A., *Lecturer in Economics*

John O. Iatrides, Ph.D., *Visiting Lecturer, Southern Connecticut State College*
Bernard Kaplan, Ph.D., *Associate Professor of Psychology*
Frederick W. Killian, LL.B., *Associate Professor of Sociology*
Martin D. Lewis, Ph.D., *Associate Professor of History, Sir George Williams University, Montreal, Canada*
John McLaughlin, M.A., *Visiting Lecturer*
F. Eugene Melder, Ph.D., *Professor of Economics*
John T. Murphey, B.S., *Visiting Lecturer, Instructor, Worcester Art Museum*
Philip G. Olson, Ph.D., *Assistant Professor of Sociology*
Alice E. Petersen, Ph.D., *Visiting Lecturer, University of Massachusetts*
Relly Raffman, A.M., *Associate Professor of Music*
Harris Rosenkrantz, Ph.D., *Associate Professor (Affiliate) of Biology*
Paul S. Rosenkrantz, Ph.D., *Visiting Lecturer, Holy Cross College*
Mordecai Rubin, Ph.D., *Assistant Professor of Romance Languages*
Dayton D. Shepherd, M.A., *Lecturer in Education*
Stanley Sultan, Ph.D., *Associate Professor of English*
Roger C. Van Tassel, Ph.D., *Associate Professor of Economics*
Edgar E. Webber, Ph.D., *Visiting Lecturer, University of Massachusetts*
Alastair J. Weir, D.Phil., *Visiting Lecturer, University of Kansas*
H. Allen Whartenby, Ph.D., *Assistant Professor of Romance Languages*
Jefferson A. White, M.A., *Assistant Professor of Philosophy*

Course Offerings

Summer, 1964

Intersession

BIOLOGY

PHYCOLOGY BIO.—S.10

Edgar E. Webber, *Visiting Lecturer*

Primarily concerned with the morphology, cytology, and ecology of freshwater algae. Selected methods of culturing algae and the importance of such research will be discussed. Field work will include an examination of local freshwater habitats, plus a trip to a Massachusetts salt marsh.

Laboratory fee: $10.00. Monday through Friday, 9:00 a.m. and 2:00 p.m.
Laboratory: To be arranged.

ECONOMICS

MONEY AND BANKING EC.—S.13

Richard J. Hruby, *Lecturer*

The principles of money and banking; characteristics of the American monetary and banking system; theoretical relations of money, prices, income.

Monday through Friday, 9:00 a.m. and 2:00 p.m.

EDUCATION

PHILOSOPHY OF EDUCATION ED.—S.290b

Robert N. Beck, *Professor of Philosophy*

The aims, processes and materials of education with special reference to the influence of philosophical ideas on educational problems. Extra work required for graduate credit.

Monday through Friday, 3:45–5:45 p.m.

ENGLISH

INDIVIDUALISM IN NINETEENTH AND TWENTIETH CENTURY ENGLISH AND AMERICAN LITERATURE ENG.—S.17

Karl O. E. Anderson, *Professor of English*

An analysis of seven major English and American literary works (or groups of works) from the early nineteenth century to the present, focusing on the changing concepts of the role of the individual in Western society. The works to be read are Emerson, *Selected Essays;* Melville, *Moby Dick;* Twain, *Huck Finn;* Hardy, *Tess of the D'Urbervilles;* Shaw, *St. Joan;* Hemingway, *The Sun Also Rises;* and Frost, *Selected Poems.*

Monday through Friday, 9:00 a.m. and 2:00 p.m.

THE SHORT STORY ENG.—S.125

William H. Carter, Jr., *Associate Professor of English*

This course involves the intensive reading of a wide range of stories which exemplify a variety of fictional methods, affording the student some knowledge of the history of this literary type. The primary aim is to help the student develop an appreciation of the broadly human values implicit in the short story.

Monday through Friday, 9:00 a.m. and 2:00 p.m.

STUDIES IN YEATS AND JOYCE ENG.—S.155

Stanley Sultan, *Associate Professor of English*

After a few introductory sessions each student will undertake, under the instructor's guidance, an independent project of his choosing in the work of either writer or of both.

Monday through Friday, time to be arranged.

FINE ARTS

INTRODUCTION TO MUSIC F.—F.A.—S.12

Relly I. Raffman, *Associate Professor of Music*

What to listen for in Music. Designed for the student with no previous musical training or experience, it will deal with the basic theoretical elements and materials of music.

Monday through Friday, 9:00 a.m. and 2:00 p.m.

SPECIAL TOPICS IN ITALIAN RENAISSANCE ART F.A.—S.191

Samuel P. Cowardin, *Associate Professor of Fine Arts*

A course emphasizing independent study, designed to promote understanding and foster enjoyment of the art of the Italian Renaissance. Special topics, which the students will pursue independently, will be related to a core study in which all will participate. The course will make use of original material in museums in the Worcester area.

Monday through Friday, time to be arranged.

GEOLOGY

PHYSICAL GEOLOGY F.—GEOL.—S.12a

Wesley E. Bryers, *Instructor in Geology*

Introduction to geology, origin of the earth, its development through time; the study of the common minerals and rocks, their structure, origin and occurrence; geological activities of the air, streams, and the sea; nature of glaciers, volcanoes and earthquakes, and the age of the earth. Laboratory work consists of mineral and rock identification.

Lectures: Monday through Friday, 9:00 a.m. and 2:00 p.m.
Laboratory: Monday and Wednesday, 1:30 p.m.–4:00 p.m.

HISTORY

THE NEGRO IN AMERICAN LIFE HIST.—S.232

Robert F. Campbell, *Professor of American History and Dean of the College*

An examination of significant topics dealing with the role of the Negro in America from slavery to freedom. Emphasis will be placed on individual reports and discussion. *Enrollment limited to 15.*

Monday through Friday, time to be arranged.

RUSSIA, 1700–1917 HIST.—S.281a

Merritt G. Abrash, *Visiting Lecturer*

A general history of Imperial Russia from the time of Peter the Great, emphasizing the development and nature of autocracy and serfdom, and Russia's emergence and problems on the international scene.

Monday through Friday, 9:00 a.m. and 2:00 p.m.

Languages

FRENCH

ELEMENTARY FRENCH REFRESHER F.—FR.—S.10

H. Allen Whartenby, *Assistant Professor of Romance Languages*

An intensive three-week course in speaking and reading French, including laboratory work in pronunciation. Classes meet at 8:00 to 8:50 (Reading), 10:50 to 11:40

(Grammar), 2:00 to 2:50 (Pronunciation and Conversation). This course is recommended as a general refresher or as a substitute for the second half of French 11 at Clark. Auditors are welcome. Limited to 14 students.

Laboratory fee: $10.00. Monday through Friday, 8:00 and 10:50 a.m.; 2:00 p.m.

PHILOSOPHY

PHILOSOPHY OF EDUCATION ED.—S.290b

Robert N. Beck, *Professor of Philosophy*

The course description is given under Education.

Monday through Friday, 3:45 p.m.–5:45 p.m.

PSYCHOLOGY

GENERAL PSYCHOLOGY F.—PSY.—S.11a

Walter H. Crockett, *Associate Professor of Psychology*

Introduction to the principles of human behavior.

Monday through Friday, 9:00 a.m. and 2:00 p.m.

PSYCHOLOGY OF LANGUAGE PSY.—S.125

Bernard Kaplan, *Associate Professor of Psychology*

Seminar and independent study pertaining to psychological analysis of the use of symbols in languages, dreams, myth, etc.

Monday through Friday, time to be arranged.

PSYCHOLOGY OF PERSONALITY PSY.—S.172a

Robert W. Baker, *Associate Professor of Psychology*

Problems and issues in personality theory; a survey of the various theoretical approaches to the study of personality, with emphasis on trait theories, typologies, field theory and psychoanalysis.

Monday through Friday, 9:00 a.m. and 2:00 p.m.

SOCIOLOGY

HUMAN EVOLUTION SOC.—S.12a

Philip G. Olson, *Assistant Professor of Sociology*

The evolution of man as a biological organism and the development of man's distinguishing feature: culture. The assessment of paleontological and archaeological evidence in an attempt to reconstruct the evolution of man and his culture. The reconstruction of human culture from the stone age to the Neolithic.

Monday through Friday, 9:00 a.m. and 2:00 p.m.

Summer Session

BIOLOGY

INTRODUCTORY BOTANY F.—BIO.—S.11

Alice E. Petersen, *Visiting Lecturer*

The structure and life processes of seed plants and 'the interrelationships between plants, animals and man. Heredity, evolution, and a brief survey of the plant kingdom will be included. Some field trips are planned.

Laboratory fee: $10.00. Monday through Friday, 9:15–10:25 a.m.
Laboratory: To be arranged.

GENERAL ECOLOGY F.—BIO.—S.17

Alice E. Petersen, *Visiting Lecturer*

An introductory study of the distribution of plants and animals, their interrelationships and adaptations to such a wide variety of environments as the seashore, sand dunes, woodlands, lakes and streams. Field trips to Mt. Monadnock, the virgin forest at Bradford, N.H., the North Shore, and the Barnstable Dunes on Cape Cod will be taken. Some field work at a freshwater lake will also be undertaken. Previous courses in Biology are helpful but not required.

Laboratory fee: $10.00. Lecture: Monday through Friday, 11:45 a.m.–12:55 p.m.
Laboratory: Two afternoons to be arranged.

INSTRUMENTAL PROCEDURES IN BIOLOGICAL INVESTIGATIONS BIO.—S.262

Harris Rosenkrantz, *Associate Professor (Affiliate) of Biology*

The theory and application of various analytical procedures and use of modern instrumentation in biological problems will be discussed. A practical introduction to the analytical balance, centrifuge, vacuum distillation, pH, dialysis, chromatography, counter-current distribution, radioactive tracers, fluorometry, turbidometry, ultraviolet infrared spectrophotometry will be presented. Instrumentation will be coordinated with techniques of tissue preparation and histochemistry.

Laboratory fee: $10.00. Course will begin on July 6 and end August 24.	Lectures: Monday through Thursday, 8:00–9:10 a.m. Laboratory: Friday, 8:00–12:00 Noon.

BUSINESS ADMINISTRATION

PUBLIC SPEAKING F.—B.A.—S.17

James F. Beard, *Professor of English*

For course description see section on English.
(Candidates for the B.S. in B.A. degree should use course No. B.A.—S.17; candidates for the A.B. degree should use the course No. ENG.—S.12.)

Monday, Wednesday and Friday, 8:00–9:50 p.m.

MANAGERIAL ACCOUNTING* B.A.—S.137

George E. Hargest, *Associate Professor of Business Administration*

Approaching accounting as a tool of management, the course emphasizes the analysis of financial statements, determination and interpretation of fund flows, revenue, cost and control concepts and profit planning.

Monday through Friday, 9:15–10:25 a.m. and 2:00–3:10 p.m.

PRINCIPLES OF MARKETING B.A.—S.150a

George A. Balko, Jr., *Assistant Professor of Economics and Business Administration*

The efficiency, social implications and public control of the activities and practices of business institutions in effecting a flow of tangible commodities between producer and consumer.

Monday, Wednesday and Friday, 6:00–7:50 p.m.

MANAGEMENT-LABOR RELATIONS B.A.—S.184a

F. Eugene Melder, *Professor of Economics*

Management-employee relationships with special reference to the institutions of collective bargaining. Consideration of various topics of labor relations, including contract negotiation, grievance procedures, changing shop social relations and public labor relations policies. Case studies and discussion methods are used.

Monday, Wednesday and Friday, 6:00–7:50 p.m.

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*Double course. Two classes daily through Summer Session.

MARKETING RESEARCH B.A.—S.252a

George A. Balko, Jr., *Assistant Professor of Economics and Business Administration*

Problems faced by business executives in marketing and the ways in which methods of scientific business research can be utilized for their solution.

Monday, Wednesday and Friday, 8:00–9:50 p.m.

ECONOMICS

ECONOMIC GROWTH EC.—S.200a

F. Eugene Melder, *Professor of Economics*

The course is organized around the general and economic theories relating to increasing productivity of national economies at various stages from traditional underdevelopment of new nations to advanced development of modern industrial nations.

Monday, Wednesday and Friday, 8:00–9:50 p.m.

EDUCATION

EDUCATIONAL PSYCHOLOGY ED.—S.202

Joseph C. Bentley, *Assistant Professor of Educational Psychology*

A study of the teaching-learning process, with special emphasis upon principles of learning and personality development of children and adolescents.

Monday through Friday, 10:30–11:45 a.m.

EDUCATION AND MENTAL HEALTH ED.—S.217

Joseph C. Bentley, *Assistant Professor of Educational Psychology*

Principles of personality development and mental health in formal and informal education, with emphasis upon factors in classroom and home which relate to effective functioning and adjustment.

Tuesday and Thursday, 6:00–8:45 p.m.

ELEMENTARY SCHOOL TEACHING—PRINCIPLES AND DEMONSTRATIONS ED.—S.261

Dayton D. Shepherd, *Lecturer in Education*

A course in which modern methods and materials in teaching will be demonstrated with a class of children in the middle grades. A study will be made of the basic principles of teaching with particular emphasis in the social studies and language arts in the elementary school and the correlation of these subjects with other fields. Demonstration will be given in classroom grouping and methods of management, showing the provision for individual differences in teaching and the development of effectiveness of independent study. Double period for 3 weeks, June 29–July 20, 3 semester hours credit.

Monday through Friday, 9:30–11:55 a.m.

DEVELOPMENTAL, DIAGNOSTIC AND REMEDIAL TECHNIQUES IN READING IN THE ELEMENTARY SCHOOL ED.—S.262

Dayton D. Shepherd, *Lecturer in Education*
Raymond F. Frink, *Visiting Lecturer*

A study of methods and materials for the development of reading skills, and for the diagnosis and remediation of reading disabilities. Emphasis will be on the techniques of analysis and the interpretation of test results and the development of remedial procedures. Special attention will be given to programmed learning and use of teaching machines. Corrective techniques for the speed and comprehension of the gifted student will also be considered. Students will have opportunity to diagnose reading disabilities of elementary school children. Double period for 3 weeks, July 21 to August 14, 1964. 3 semester hours credit.

Monday through Friday, 1:30–3:55 p.m.

ENGLISH

ENGLISH COMPOSITION AND LITERATURE F.—ENG.—S.11b

John McLaughlin, *Visiting Lecturer*

This second half of the year course aims to continue the development of correctness and clarity in the student's writing, and to help him develop sound critical principles in evaluating poetry.

Monday, Wednesday and Friday, 6:00–7:50 p.m.

PUBLIC SPEAKING F.—ENG.—S.12

James F. Beard, *Professor of English*

A course in the fundamentals of public speaking, emphasizing both the composition and delivery of the most common types of speeches, such as introductory, expository, and impromptu speeches. Special attention will be given to problems of human relations, voice tests, vocabulary development, and the acquisition of self-confidence, poise, and effective communication techniques. Practice speeches, conference, and voice recordings to enable the student to recognize and correct his speech deficiencies. (Candidates for the B.S. in B.A. degree should use course No. B.A.—S.17; candidates for the A.B. degree should use the course No. ENG.—S.12.)

Monday, Wednesday and Friday, 8:00–9:50 p.m.

INTERMEDIATE COMPOSITION ENG.—S.19

Charles S. Blinderman, *Associate Professor of English*

Through the study and application of rhetorical methods, this course is designed to assist students to improve their expository writing. Diction, sentence structure, paragraph integrity, theme organization, logic, semantics, persuasion, the relationship of idea to expression and of expression to audience are among the matters analyzed. Permission of instructor.

Monday through Friday, 10:30–11:40 a.m.

CONTEMPORARY AMERICAN FICTION ENG.—S.106

James F. Beard, *Professor of English*

A critical introduction to the best American fiction since about 1900, with emphasis on its esthetic values, sociological insights, and philosophic implications. Authors read and discussed will include Henry James, Theodore Dreiser, F. Scott Fitzgerald, Sherwood Anderson, Ernest Hemingway, William Faulkner, and others.

Monday, Wednesday and Friday, 6:00–7:50 p.m.

LITERATURE OF WESTERN CIVILIZATION ENG.—S.150

Charles S. Blinderman, *Associate Professor of English*

A study of literature basic to the cultural development of western civilization; selections will range in subject from mythology to political science, in type from the epic poem to the essay, and in time from Greek antiquity to the Renaissance.

Monday through Friday, 8:00–9:10 a.m.

FINE ARTS

INTRODUCTION TO CONTEMPORARY ART F.—F.A.—S.195

John T. Murphey, *Museum Instructor, Worcester Art Museum*

Study of basic ways and means for forming and understanding contemporary works in art and design. Illustrated lectures and criticisms of experiments done with simple materials in black and white and in color. Work in line, shape, patterns, volume, color, and space in drawing and painting. No previous formal training is required for the beginner. A review of fundamental ideas for the advanced student and professional worker in the field of advertising and industrial design, and teaching. Satisfies Fine Arts requirement.

Monday, Wednesday and Friday, 8:00–9:50 p.m.

HISTORY AND GOVERNMENT

HISTORY OF AMERICAN CIVILIZATION SINCE 1865 HIST.—S.135

Gerald N. Grob, *Associate Professor of American History*

A survey of the social, economic, and political development of American civilization from 1865 to the present. Emphasis will be placed on the major themes and problems of United States history, giving special consideration to controversial interpretations.

Tuesday and Thursday, 6:00–8:45 p.m.

SEMINAR ON THE IDEA OF HISTORY HIST.—S.202

Daniel R. Borg, *Assistant Professor of History*

Considers representative theorists and historians from Thucydides to the Nineteenth Century. Meets twice weekly.

Monday and Thursday, 7:00–9:00 p.m.

GERMANY SINCE 1815 HIST.—S.215

Daniel R. Borg, *Assistant Professor of History*

Considers German political theory, the course of nineteenth-century political development including unification under Bismarck, the ill-fated Weimar Republic, and the nature and practice of Nazi totalitarianism.

Monday through Friday, 8:00–9:10 a.m.

THE AMERICAN REVOLUTION, 1763–1789 HIST.—S.236

George A. Billias, *Associate Professor of American History*

The course is planned to cover the growth of revolutionary opinion in the American colonies from the end of the Seven Years War to 1775; to describe the actual events of the Revolutionary War in some detail; and to show the reaction from revolution which came to fruition in the adoption of the Federal Constitution.

Monday, Wednesday and Friday, 6:00–7:50 p.m.

ASIA, AFRICA AND THE WEST* HIST.—S.280

Martin D. Lewis, *Visiting Lecturer*

A survey of the history of Asia and Africa in modern times, stressing the interaction between the indigenous civilizations of these continents and that of the West, and the interrelationships between developments in Eastern and Southern Asia, the Middle East, and Africa.

Monday through Friday, 9:15 a.m. and 2:00 p.m.

*Double course. Two classes daily through Summer Session.

THE SOVIET SYSTEM HIST.—S.282

John O. Iatrides, *Visiting Lecturer*

The course examines the political, economic and social development of Russia since the Bolshevik Revolution. After a brief historical survey of twentieth century Russia the ideology, institutions and foreign policies of the Soviet system will be examined.

Monday through Friday, 9:15–10:25 a.m.

AMERICAN POLITICAL PARTIES GOV.—S.251a

Morris H. Cohen, *Associate Professor of Government*

A study of the functioning of American party organizations, pressure groups, and the electorate in American politics. Emphasis is placed upon current problems and trends in the field.

Monday through Friday, 9:15–10:25 a.m.

Languages

FRENCH

INTERMEDIATE FRENCH* F.—FR.—S.12

Mordecai Rubin, *Assistant Professor of Romance Languages*

This course aims to develop the fundamental skills of pronunciation, conversation, grammar, reading. The approach will be conversational but will include carefully graded readings and laboratory work. Open to students who have had a first-year college course or the equivalent. Indivisible double course.
Laboratory fee: $20.00.

Monday through Friday, 9:15–10:25 a.m. and 2:00–3:10 p.m.

GERMAN

INTRODUCTORY GERMAN* F.—GER.—S.11

Karl J. R. Arndt, *Professor of German*

A complete first year college course in German which will make extensive use of modern language teaching aids. Aural-oral practice. Early in the course the student will be introduced to a series of graded readers, which must be mastered by the end of the course and which are designed to prepare him for independent reading of German newspapers and journals. The course will demand the full time and attention of those interested.

Monday through Friday, 8:00–9:10 a.m. and 11:30 a.m.–12:40 p.m.

*Double course. Two classes daily through Summer Session.

INTERMEDIATE GERMAN* F.—GER.—S.12

James S. Edwards, *Associate Professor of German*

Review of grammar, translation from and into German, rapid reading of modern German prose. An intensive course covering the material of the regular second year of college German. The course will demand the full time and attention of those interested. Laboratory optional.

Monday through Friday, 9:15–10:25 a.m. and 2:00–3:10 p.m.

SPANISH

INTRODUCTORY SPANISH* S.—SP.—S.11

Raymond E. Barbera, *Associate Professor of Romance Languages*

For beginners. The elements of grammar and pronunciation; carefully graded reading; exercises in speaking and writing.
Laboratory fee: $20.00.

Monday through Friday, 9:15–10:25 a.m. and 2:00–3:10 p.m.

MATHEMATICS

FUNDAMENTALS OF MATHEMATICS* F.—MATH.—S.11

Instructor to be announced

Elementary study of mathematical logic, postulational systems, algebra, point sets, analytic geometry, the concept of function, trigonometric functions, natural numbers, cardinal numbers, the concept of limit, and some brief attention to elementary probability and statistical inference.

Monday through Friday, 9:15–10:25 a.m. and 2:00–3:10 p.m.

CALCULUS* MATH.—S.12

Instructor to be announced

Daniel J. Fleming + H.A. Bierlmaier

Introduction to differential and integral calculus; essential for further study in mathematics as well as for the study of applications in the natural and social sciences.

Monday through Friday, 9:15–10:25 a.m. and 2:00–3:10 p.m.

*Double course. Two classes daily through Summer Session.

INTERMEDIATE CALCULUS* MATH.—S.13

Instructor to be announced

Geometric and physical applications of integration, sequences and series, three-dimensional analytic geometry, partial differentiation, multiple integrals, and a brief introduction to differential equations.

Monday through Friday, 9:15–10:25 a.m. and 2:00–3:10 p.m.

PHILOSOPHY

PHILOSOPHY OF RELIGION F.—PHIL.—S.15

Jefferson A. White, *Assistant Professor of Philosophy*

The nature of religion as revealed by an examination of the history of world religions and representative types of contemporary religious philosophy.

Monday through Friday, 10:30–11:40 a.m.

DIRECTED STUDIES IN ESTHETICS PHIL.—S.130

Jefferson A. White, *Assistant Professor of Philosophy*

Intensive study of selected topics in the field of esthetics with emphasis on the execution of independent projects.

Monday through Friday, 9:15–10:25 a.m.

PSYCHOLOGY

GENERAL PSYCHOLOGY PSY.—S.11b

Instructor to be announced

The second half of the General Psychology course, begun in the Intersession.

Monday, Wednesday and Friday, 8:00–9:50 p.m.

PSYCHOLOGY OF ABNORMAL BEHAVIOR PSY.—S.103b

Robert W. Baker, *Associate Professor of Psychology*

A survey of the major types of abnormal behavior, with consideration of their implications for the psychology of personality.

Monday through Friday, 8:00–9:10 a.m.

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*Double course. Two classes daily through Summer Session.

INDUSTRIAL PSYCHOLOGY PSY.—S.190

Paul S. Rosenkrantz, *Lecturer*

A course dealing with the psychological factors underlying the interaction of individuals in their everyday working activities. Motivations, attitudes and values, as they affect human relations in industry will be discussed. Problems of industrial morale and problems of supervisory relationships will be considered, as will be the use of psychological tests and other techniques in job evaluation, personnel selection and placement.

Monday, Wednesday and Friday, 6:00–7:50 p.m.

PSYCHOLOGY OF VALUES AND VALUING PSY.—S.191

Alastair J. Weir, *Visiting Lecturer*

An examination of the role of values in the theory-construction of psychologists and in the various activities of human beings. Principal emphasis will be on the role of value judgments in personality development, perception, learning, etc. Cultural and individual differences in valuation will be discussed.

Monday through Friday, 9:15–10:25 a.m.

SEMINAR ON THEORETICAL ISSUES IN PSYCHOLOGY PSY.—S.192

Bernard Kaplan, *Associate Professor of Psychology*

A seminar dealing with theoretical and methodological problems in psychology and related social sciences.

Monday through Friday, 9:15–10:25 a.m.

SOCIOLOGY

PRINCIPLES OF SOCIOLOGY SOC.—S.11a

Frederick W. Killian, *Associate Professor of Sociology*

The development of man's world—the social, the normative, structure and function, some fallacies in sociological thinking, social action and interaction, social change and planning, social institutions.

Monday through Friday, 10:30–11:40 a.m.

SOCIAL ANTHROPOLOGY SOC.—S.12b

Philip G. Olson, *Assistant Professor of Sociology*

An analysis of primitive society with emphasis on social structure, including religion, kinship and economics. The relation between culture and personality and the processes of social change in the primitive world are explored.

Monday, Wednesday and Friday, 8:00–9:50 p.m.

CRIME, DELINQUENCY AND SOCIETY SOC.—S.13a

Frederick W. Killian, *Associate Professor of Sociology*

An examination of the social contexts out of which personality types emerge; the development of the social mind and self; theories of interpersonal behavior and the presentation of self; the relation between individual behavior and social structures. An analysis of the role of history, society, and psychological factors in the development of personal identity and other components of the self, including anxiety, social personality, and character. The readings will emphasize both primitive society and the modern Western world.

Monday through Friday, 11:45 a.m.–12:55 p.m.

COURSE SCHEDULE

INTERSESSION—JUNE 8–JUNE 27—All classes meet twice a day 9:00 a.m. and 2:00 p.m., except Philosophy of Education (3:45–5:45 p.m.), and Elementary French Refresher (8:00, 10:50 a.m. and 2:00 p.m.).

Studies in Yeats and Joyce, Special Topics in Italian Renaissance Art, The Negro in American Life, and Psychology of Language will hold their first meeting Monday, June 8 at 2:00 p.m., thereafter by arrangement.

Bio.	—S.10	Phycology	Webber
Ec.	—S.13	Money and Banking	Hruby
Ed.	—S.290b	Philosophy of Education	Beck
Eng.	—S.17	Individualism in Nineteenth and Twentieth Century English and American Literature	Anderson
Eng.	—S.125	The Short Story	Carter
Eng.	—S.155	Studies in Yeats and Joyce	Sultan
F.A.	—S.12	Introduction to Music	Raffman
F.A.	—S.191	Special Topics in Italian Renaissance Art	Cowardin
Geol.	—S.12a	Physical Geology	Bryers
Hist.	—S.232	The Negro in American Life	Campbell
Hist.	—S.281a	Russia, 1700–1917	Abrash
Fr.	—S.10	Elementary French Refresher	Whartenby
Psy.	—S.11a	General Psychology	Crockett
Psy.	—S.125	Psychology of Language	Kaplan
Psy.	—S.172a	Psychology of Personality	Baker
Soc.	—S.12a	Human Evolution	Olson

SPECIAL PROGRAM—JULY 6 through JULY 31, Mornings: 8:30–10:15 and three afternoons a week 2:30–4:00 p.m.

Economics Workshop for Secondary School Social Studies Teachers	Borger, Coupe, and Van Tassel

SUMMER SESSION—(Day Classes)—JUNE 29–AUGUST 15

8:00–9:10 a.m. Monday through Friday

Bio.	—S.262	Instrumental Procedures in Biological Investigations. Course begins July 6 and ends August 24	Rosenkrantz
Eng.	—S.150	Literature of Western Civilization	Blinderman
Hist.	—S.215	Germany Since 1815	Borg
Psy.	—S.103b	Psychology of Abnormal Behavior	Baker

9:15–10:25 a.m. Monday through Friday

Bio.	—S.11	Introductory Botany	Petersen
Gov.	—S.251a	American Political Parties	Cohen
Hist.	—S.282	The Soviet System	Iatrides
Phil.	—S.130	Directed Studies in Esthetics	White
Psy.	—S.191	Psychology of Values and Valuing	Weir
Psy.	—S.192	Seminar on Theoretical Issues in Psychology	Kaplan

9:30–11:55 a.m. Monday through Friday, June 29–July 20

Ed.	—S.261	Elementary School Teaching—Principles and Demonstrations	Shepherd

10:30–11:40 a.m. Monday through Friday

Eng. —S.19	Intermediate Composition	Blinderman
Ed. —S.202	Educational Psychology	Bentley
Phil. —S.15	Philosophy of Religion	White
Soc. —S.11a	Principles of Sociology	Killian

11:45–12:55 p.m. Monday through Friday

Bio. —S.17	General Ecology	Petersen
Soc. —S.13a	Crime, Delinquency and Society	Killian

1:30–3:55 p.m. Monday through Friday, July 21–August 14

Ed. —S.262	Developmental, Diagnostic and Remedial Techniques in Reading in the Elementary School	Shepherd and Frink

8:00–9:10 a.m. and 11:30 a.m.–12:40 p.m.

Ger. —S.11	Introductory German	Arndt

9:15 a.m. and 2:00 p.m. Monday through Friday—Double Courses

B.A. —S.137	Managerial Accounting	Hargest
Hist. —S.280	Asia, Africa and the West	Lewis
Fr. —S.12	Intermediate French	Rubin
Ger. —S.12	Intermediate German	Edwards
Sp. —S.11	Introductory Spanish	Barbera
Math.—S.11	Fundamentals of Mathematics	To be announced
Math.—S.12	Calculus	To be announced
Math.—S.13	Intermediate Calculus	To be announced

SUMMER SESSION—(Evening classes)—JUNE 29–AUGUST 15

6:00–7:50 p.m. Monday, Wednesday and Friday

Eng. —S.11b	English Composition and Literature	McLaughlin
Eng. —S.106	Contemporary American Fiction	Beard
B.A. —S.150a	Principles of Marketing	Balko
B.A. —S.184a	Management-Labor Relations	Melder
Hist. —S.236	The American Revolution, 1763–1789	Billias
Psy. —S.190	Industrial Psychology	Rosenkrantz

6:00–8:45 p.m. Tuesday and Thursday

Ed. —S.217	Education and Mental Health	Bentley
Hist. —S.135	History of American Civilization since 1865	Grob

7:00–9:00 p.m. Monday and Thursday

Hist. —S.202	Seminar on the Idea of History	Borg

8:00–9:50 p.m. Monday, Wednesday and Friday

B.A. —S.252a	Marketing Research	Balko
Ec. —S.200a	Economic Growth	Melder
Eng. —S.17	Public Speaking (also B.A. S.17)	Beard
F.A. —S.195	Introduction to Contemporary Art	Murphey
Psy. —S.11b	General Psychology	To be announced
Soc. —S.12b	Social Anthropology	Olson

Return to
SUMMER SCHOOL OFFICE, CLARK UNIVERSITY,
950 MAIN STREET, WORCESTER, MASS.

Please send me a registration card for the 1964 Clark University Summer School so that I may preregister.

My academic status is:

College Graduate ☐ College Undergraduate ☐

Special Student ☐ Clark University Evening College ☐
(not a degree candidate)

I (have, have not) previously attended the Clark University Summer School.

NAME ....

ADDRESS ....

City ....

Zone ....

State ....

CLARK UNIVERSITY

SEVENTY-FIFTH

ANNUAL COMMENCEMENT

CAMPUS GREEN

SUNDAY, JUNE 6, 1965

WORCESTER, MASSACHUSETTS

MDCCCLXXXVII

ORDER OF EXERCISES

Preludes and Processional Canzon Septimi toni No. 1 *Gabrieli*
Psalm 19 "The Heavens Are Telling the Glory of God" *Marcello*
Introduction and Toccata *Walond*

Invocation The Reverend Thaddeus Clapp
St. Mark's Episcopal Church

Welcome by the President Dr. Howard B. Jefferson

Commencement Address Dr. Edward C. Welsh
Executive Secretary
National Aeronautics and Space Council

Conferring of Degrees

Alma Mater
Fiat Lux (Stanzas I and III)

Benediction The Reverend Thaddeus Clapp

Recessional Voluntary in C *Purcell*
A Trumpet Voluntary *Purcell*

EVENING COLLEGE CANDIDATES FOR THE DEGREE OF BACHELOR OF SCIENCE IN BUSINESS ADMINISTRATION

Paul M. Anderson
Walter L. Capone, Jr.
*David Richard Carr
Norman Walter Cousens
Paul Evangelidis
Philip Nelson Farrington, Jr.
Robert Joseph Fitzsimmons
Jack Herbert Gibbs
John William Heanue
John Hiram Kellogg
Frederick William Kreuzinger
Dante John Lepore
George Thomas Logan
Richard Adrian Martin
Richard Charles Morrissey
Edward Naliwajka
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Irving Thompson Nicoll
Alfred Hakon Olsen
Elwin Hillard Peterson
Roland R. Richard
Andrew J. Stellato, Jr.
William Frederick Westerlind
Laird Emerson Wiggin
Vernon Arthur Willard

EVENING COLLEGE CANDIDATES FOR THE DEGREE OF BACHELOR OF SCIENCE IN BUSINESS ADMINISTRATION WITH HONORS

Cum Laude

Edward Leon Buck
Leon Herman Chaplin, Jr.
Alice C. Gannon

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Adam Bagushinskas, Jr.
Kathryn Elizabeth Christian
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Wesley Bergman Greene
Roberta Lee Irwin
Robert Elliot Jackson
Theodore E. Kalinowski
Angeline Kartalos
Barbara Elizabeth Kastenbaum
Ethelyn Smith Northridge
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Louise Ogren Powers
Craig Harrison Reynolds
Gloria Louise Rollinson
Joseph Paul Scannell
Marion Lois Schloss
Claire Mary Schmidt
Susan Marshall Smith
John Robert Snyder
Paul Harry Werme

EVENING COLLEGE CANDIDATE FOR THE DEGREE OF BACHELOR OF SCIENCE IN GENERAL STUDIES WITH HONORS

Cum Laude

Marcia M. Fischer

**As of June 7, 1964*

CANDIDATES FOR THE DEGREE OF BACHELOR OF SCIENCE IN BUSINESS ADMINISTRATION

Bradford Taylor Beaton
Walter Franklin Crosby, Jr.
*Richard William DiLeo
Robert Gardner Duncan
Jeffrey Alan Edinburg
Edward Paul Hogan
*Robert Clark Mathews
Gordon Graham Webster, Jr.

CANDIDATES FOR THE DEGREE OF BACHELOR OF SCIENCE IN BUSINESS ADMINISTRATION WITH HONORS

Departmental Honors

David Harvey Chaifetz, *Economics*
Michael Abba Sandman, *Economics*

CANDIDATES FOR THE DEGREE OF BACHELOR OF ARTS

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Steven Joel Adelson
Peter Hurle Alberghini
James Durrant Aldrich
Lawrence Roger Allman
Gail Agnes Anderson
Gail Lois Anderson
Robert John Anderson
Jeffrey Roy Ashkin
D'Army Bailey
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*Duane Jamison Corriveau
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Judith Ann Davagian
Martin Harold Diamond
Mary Lynne Donelan
William Louis Drazen
Sandra Joy Duffield
Philip Bassett Durgin, Jr.
Khamis Abdallah El Kharusy
John Robert Ellis
Eulalia Connors Fagan
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*John Douglas Forrester
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Martin Burt Garment
Susan Bruce Gillespie
Andrew Paul Goldberg
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Robert Richard Goulet
Margaret Mary Grady
Oliver Charles Graver
Nathan Louis Greece
John Albert Gregoire
*John Robert Guevin
Joan Haworth
Jacqueline Mae Herrick
Oliver Jack Herz
Marcia Higginbottom
Arthur Avrom Hiller
Peter Marc Holland

**As of June 7, 1964*

Nancy Roberta Horovitz
*Stephen Elliot Horowitz
Gail Sundheim Hoss
Donald Miller Houghton
Leon Hovsepian, II
Roy Arthur Hultberg
Donna Maria Johnson
Karen Ellen Karlebach
David Harold Karpel
Gerry Martha Kaufman
Susan Alice Keene
James Battaille Kemp, III
Richard Brewster Knowlton
Richard Martin Koziak
Jordan Philip Krasnow
Herbert Spencer Kupperman, Jr.
Lynne Robinson Lawrence
*Robert Stanley Lesser
Leslie Levy
Arnold Simon Loeb
Judith Mann Lorimer
Deborah Joan Loring
George Wayne Lucier
Richard Warren Lyman, Jr.
Peter Anthony MacQueen
Stephen Marcus
Violeta Jurate Matulevicius
William Knox McAllister
Michael Welch McQuade
Samme Jennifer Merin
Liberty Mhlanga
Dale Charles Miller
George Robert Minkoff
*Paul James Montigny
John Francis Mooney, III
*Thomas Russell Moore
John Galvin Mulvey
Kay Kenyon Mylott
Martin Nathanson
Margaret Jean Navitski
Kathleen Teresa Nevins
John Delafield Nordstrom
Roger George Nyquist
*Amy Wolf O'Leary
*Neil Shepard Orenstein
David Elliot Orlinsky
Peter David Packer
Donald Peter Palmerino
Marian Elizabeth Polon
*David Carl Polson
*Susan Barbara Prager
Larry John Price
Ronald Jacobs Rakosky
Elaine Rappaport
Richard Eugene Reposa
Peter Bert Ronberg
Fredric David Rosen
*Ilene Terry Rosenfeld
Lois Myrna Rosenthal
Andrew Charles Rudin
Louise Joan Rundstrom
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*James Ross Scielzo
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Irene Dorothy Stein
Marian Audrey Strauss
*Anthony Ralph Sullivan
*Barry Teplow
Ralph Kenneth Tomasian
Katherine Anne Ulinskas
James Douglas Van Houten
Jonathan Michael Wagner
Meridith Daniels Wesby
Thomas Graham Buchanan Wheelock
Arthur James Whitney
Joyce Hutchins Wiggin
Steven Larry Wolf
Barbara Ruth Yeaw
Gayle Hope Zagoren
Juliana Louise Zorzi

CANDIDATES FOR THE DEGREE OF BACHELOR OF ARTS WITH HONORS

Departmental Honors

Edward George Andavall, *Economics*
Peter Lawrence Candell, *Psychology*
Helen May Cohn, *Government*

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*_As of June 7, 1964_

Lewis Alan Fechter, *History*
Carole Elizabeth French, *Sociology*
Saul Samuel Harris, *Sociology*
Thomas Myers Hearne, Jr., *Mathematics*
Joan Florence Kallos, *Sociology*
Arthur James Krim, *Geography*
Jeffrey Arthur Lavine, *Economics*
*William Robert McKenna, *Psychology*
Roger Carey Parker, *History*
June Eileen Patron, *Government*
Curtis Jon Peplau, *English*
Mary Ruth Pfau, *Geography*
David Howard Quist, *History*
Donald Arthur Reed, *Physics*
John Jackson Reid, *Economics*
*Walter Clark Seelye, II, *Mathematics*
Pasquale Frank Silvestri, *Economics*
Phillip John Szenher, *English*
Richard Gordon Travers, *Psychology*
Gerald Edward Wilson, *International Relations*
Kenneth Norman Zuckerbrot, *History*

Cum Laude

Ronald Paul Abato, *and with Honors in Psychology*
Penny Greig Bjorkman
Carolyn Linda Cramer
Christine Ermina Dorresteyn
Lawrence Elliot Freedberg, *and with Honors in Chemistry*
Rebecca Bryant Holloway
Marsha Ann Irwin
Louis John Kern, *and with High Honors in History*
Ann Marie Lindberg, *and with Honors in Chemistry*
Jay Lawrence Margulies, *and with High Honors in Government*
Barbara Jane Matuzek
Robert Campbell McMillan, *and with Highest Honors in Psychology*
James Arthur Rooney, *and with Honors in Physics*
Jerold Charles Rosenfeld, *and with High Honors in Chemistry*
Robert Serlin

Magna Cum Laude

Allen Andrew Adinolfi
Marcia Claire Dodge, *and with Honors in Chemistry*
Douglas Leslie Johnson, *and with Highest Honors in Geography*
*Ross Ljungquist
Rebecca Raye Swope

Summa Cum Laude

Bruce Wesley Bell
Jean Mary Hunt, *and with Highest Honors in English*
Karen Alda Sedgwick

As of June 7, 1964

CANDIDATES FOR THE DEGREE OF MASTER OF BUSINESS ADMINISTRATION

Alfred Eric Barry
William Joseph Gleason
Edward Eric Johnson
William Schonman, Jr.
Joseph Ralph Vairo

CANDIDATES FOR THE DEGREE OF MASTER OF ARTS IN EDUCATION

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Richard Chester Chiras
Vincent Anthony DiNino
Richard Butler Gelpke
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Metta-Jane Menard
Elaine Olga Patrikas
Nan Helen Prescott
Ralph Earle Southwick

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Peter Ayers Nickerson
Eleanor Haase Phillips

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Milly Mee-Lee Lo
Martin Henry Mach
Karl Herbert Raab

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David Abraham Raboy
Tadatomo Yamaguchi

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Syed Shamimuddin Ahmad
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Doris Jones Peontak
Roger Adrian Roberge
Bryan Thompson

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Cynthia Gertrude Kruger
John Osborne McLaughlin
John Richard Mulroy, Jr.
James Everett Trupin

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Hans August Bierlmaier
Allan Ephraim
Daniel John Fleming
Sue Kao
Constance Lee Lewis
Richard Vaughn Olson
Anna Chin Sia
Sister Roseanne Marie Spinney

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Ying-Chieh Hsu

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Frank John Curcio
Paulette Lebensfeld
Israel Nachshon
Dvora Rosenbach
Leonard Fredrick Topp

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Alice Theresa O'Malley
Thomas Livingstone Roberts
Dean Finley Stevens

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Hiroshi Baba
Christopher Gatrousis
Miasnig Hagopian
Herbert Isidor James
Charles Herbert Nelson
Vishv Prakash Saxena
Cho-Lu Sia

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Geography

Simon Baker
Leonard Walter Bowden
David Elmore Buerle
Richard Joseph Kopec
Paul John Mika

History, Government, and International Relations

Donald Hawley Norton

Psychology

Leonard Edward Cirillo
Anna Means Guyette
Harold Nathan Kellner
George Rand
Arlene Aron Roberts

CONFERRING OF HONORARY DEGREES

STEPHEN PERHAM JEWETT	*Doctor of Science*
Presented by Seymour Wapner	
DANIEL CATTON RICH	*Doctor of Letters*
Presented by Samuel Pendleton Cowardin	
MARY INGRAHAM BUNTING	*Doctor of Science*
Presented by Rudolph Fink Nunnemacher	
EDWARD C. WELSH	*Doctor of Laws*
Presented by Robert Mooers Hyde	

FIAT LUX

Words by
E. L. Clarke, '09

Music by
R. F. Fletcher, '10

Oh Clark! Thy sons have gathered
To thee from east and west,
To pledge with deep devotion
The college they love best.
They love thy halls and campus,
Each comrade of their heart
The memories, aims, traditions
That make thee what thou art.

Hail Clark! We who revere thee
Salute thee with a cheer!
While we shall live we'll praise thee.
Oh college without peer!
Only with life shall perish
Thy name and memory bright,
Thy sons shall ever cherish
The scarlet and the white!

Godspeed our Alma Mater,
And may she ever be
The leader of the leaders,
The freest of the free!
Her sons shall still press onward,
The foremost in the fight,
Till everywhere her watchword
Shall ring, "Let there be light!"

CLARK

Summer School 1965

CLARK UNIVERSITY BULLETIN

INTERSESSION
June 7 to June 26

SUMMER SESSION
June 28 to August 14

CALENDAR

Summer, 1965

June

7 Monday, Intersession Registration 9 to 12 noon
First class meeting 2 p.m.

23 Wednesday, Registration for evening classes

26 Saturday, Examinations for Intersession courses, 9 to 12 noon

28 Monday, Summer Session Registration for day classes 9 to 12 noon
Evening classes begin 6 p.m.

29 Tuesday, day classes begin 8 a.m.

July

20 Tuesday, Examinations in double courses concluding after first three weeks

21 Wednesday, Beginning of double courses of second three weeks

August

11 Wednesday, No day classes
Examinations for evening classes meeting at 6 p.m., Monday, Wednesday and Friday, and Monday and Wednesday—7 to 10 p.m.

12 Thursday, Examinations for classes meeting at 8 a.m.—9 to 12 noon
Examinations for classes meeting Tuesday and Thursday at 6 p.m.—7 to 10 p.m.
Examinations for classes meeting Monday and Thursday at 7 p.m.—7 to 10 p.m.

13 Friday, Examinations for classes meeting at 9:15 a.m.—9 to 12 noon
For evening classes meeting at 8 p.m. Monday, Wednesday and Friday—7 to 10 p.m.

14 Saturday, Examinations for classes meeting at 10:30 a.m.—9 to 12 noon
For classes meeting at 11:45 a.m.—2 to 5 p.m.
For classes meeting at 1:30 p.m.—2 to 5 p.m.

Clark University
Summer School

Worcester, Massachusetts

Intersession, June 7 to June 26

Summer Session, June 28 to August 14

1965

CLARK UNIVERSITY BULLETIN

Number 284 April, 1965

The Clark University Bulletin is published six times a year, in April, twice in July, twice in September and December. Second-class postage paid at Worcester, Massachusetts. Correspondence may be addressed to: The Summer School, Clark University, 950 Main Street, Worcester, Massachusetts 01610.

A Unique Opportunity to Learn

Small groups of students working in courses they enjoy typify the educational opportunity offered by the Clark University Summer School. Superior teaching and interested students combine to make for effective learning. Active participation by the students in class discussions is encouraged.

Courses are available in the arts and sciences at both the graduate and undergraduate level, permitting students to accelerate their work toward a degree. In addition, the selection of courses in the modern languages permits current and prospective graduate students to better prepare themselves for graduate study.

There is a variety of courses available for teachers who seek professional advancement. The selection of subject matter courses is excellent, and several education courses will be offered.

Evening classes in liberal arts and business will be offered for those who have part time summer jobs during the day and wish to gain academic credit at the same time, as well as for those who are continuing their studies in the Clark University Evening College.

Clark University has an excellent library employing the open shelf system with an opportunity for unlimited browsing of the large and varied collection of modern books, professional periodicals and an unusually large map collection.

Clark is ideally located for summer study. The summer climate is excellent and the University is near numerous cultural and recreational facilities. Trips to Tanglewood, to ball games in Boston, and swimming in the nearby ponds have been very popular. The fine tennis courts will be available for use by Summer Session students.

Degrees and Credits

All courses offered are accepted at Clark for credit toward the degrees of Bachelor of Arts and Bachelor of Science in Business Administration, or either of the Evening College degrees unless specifically limited to one of the degrees as stated in the course description. Many courses in the Summer School count toward the degrees of Master of Arts, Master of Arts in Education, and Doctor of Philosophy. Approval should, however, be obtained in advance from a student's major department.

The degree of Master of Arts may be obtained in certain fields by completing satisfactorily a full-time program for five summers. It is best for students interested in such a program to discuss their plans directly with the Chairman of the department concerned. Graduate students formally registered in the Summer School may, with the approval of their major department, enroll in thesis courses under the direction of regular members of the staff other than those listed in the Summer School Bulletin.

Each single course offered in the Summer School is equivalent to a half-year course of the academic year and yields three semester hours of credit. The double courses in the languages, history and mathematics which meet for two lecture periods a day for six and one-half weeks are equivalent to year courses (six semester hours credit).

Intersession courses meet for two 70 minute periods at 9:00 a.m. and at 2:00 p.m., Monday through Friday. Summer Session courses during the day meet for one 70 minute period Monday through Friday. Double courses meet for two 70 minute periods five days a week. Evening classes meet for 110 minutes on Monday, Wednesday and Friday evenings. Exceptions to the above time schedule are listed under course descriptions.

A student may carry in a normal program one course in the Intersession (three semester hours) and two courses in the Summer Session (six semester hours). Permission to carry an additional course may be granted only in exceptional cases if approved in writing prior to registration. Course changes after the third day of classes must be approved by the Director.

One transcript of a student's Summer School record is available free of charge, and application for it should be made in the Summer School Office. There is a $1.00 fee for each additional transcript.

TUITION AND FEES

A matriculation fee of $5.00 is required of all students entering Clark University for the first time. The tuition for each three semester hour course is $105.00. Persons who wish to audit a course without receiving credit register and pay tuition at the stated rate. However, students taking two courses for credit during the Summer Session may audit a third course without additional cost. Tuition and fees must be paid in the Summer School Office immediately following registration. A fee for late registration of $3.00 must be paid by students who fail to complete registration within the official Registration Period.

WITHDRAWALS AND REFUNDS

Students who withdraw with the approval of the Director of the Summer School may expect a refund of tuition paid in full on the following schedule:

Intersession		*Summer Session*	
June 7, 8	full refund	June 28, 29, 30	full refund
June 9, 10	two-thirds	July 1, 2	two-thirds
June 11	one-third	July 5, 6	one-third

LIVING FACILITIES AND COSTS

Rooms will be available for both men and women in the new University dormitories but reservations should be made promptly on or before June 1. Room rent is $12.50 per week for single room occupancy and $10.00 for double. A room and key deposit of $10.00 is required in advance to hold a room. This deposit is not part-payment for the rent. The $10.00 will be returned in full if the room is undamaged when the key is returned.

FOOD SERVICE INFORMATION

Clark University will offer breakfast, lunch and supper in the Snack-Bar, Jefferson Hall Monday through Friday, 7:30 a.m. to 6:30 p.m. Meal tickets may be purchased on a weekly basis covering 15 meals for a price of $15.00. Meal tickets will entitle you to seconds on any meal. A la carte service will be available during the same hours. The Snack-Bar will be open June 7 through August 13.

LIBRARY HOURS

The library at Clark University will be opened Monday through Friday, 9:00 a.m. through 8:00 p.m.

ELIGIBILITY FOR COURSES

Courses beginning with "1" are open to all undergraduates except freshmen. Courses preceded by an "F" are open to freshmen. Courses beginning with "2" are open to advanced undergraduates and graduate students. Teachers working toward degrees or credits in Education should consult with Professor Vernon Jones, Chairman of the Department of Education.

ADMINISTRATIVE OFFICERS OF THE UNIVERSITY

Howard B. Jefferson, *President*
Robert M. Hyde, *Executive Vice President*
Robert F. Campbell, *Dean of the College*
Thomas J. Dolphin, *Director of the Summer School*

SUMMER SCHOOL STAFF

(All are Clark University Faculty members unless otherwise indicated)

Merritt C. Abrash, Ph.D., *Rensselaer Polytechnic Institute*
Vernon Ahmadjian, Ph.D., *Associate Professor of Botany*
Karl O. E. Anderson, Ph.D., *Professor of English*
Karl J. R. Arndt, Ph.D., *Professor of German*
J. Richard Aronson, Ph.D., *Assistant Professor of Economics, Government, and Business, Worcester Polytechnic Institute*
George A. Balko, Jr., M.B.A., *Assistant Professor of Business Administration*
Frederick E. Bamford, M.B.A., *Assistant Professor of Economics and Business Administration*
Raymond E. Barbera, Ph.D., *Associate Professor of Romance Languages*
James F. Beard, Ph.D., *Professor of English*
George A. Billias, Ph.D., *Associate Professor of American History*
Charles S. Blinderman, Ph.D., *Associate Professor of English*
Daniel R. Borg, Ph.D., *Assistant Professor of History*
Wesley E. Bryers, Ph.D., *Assistant Professor of Geology*
Guy H. Burnham, M.A., *Instructor in Geography and Cartography*
Robert F. Campbell, Ph.D., *Dean of the College and Professor of American History*
Stephen Canner, M.A., *Research Fellow*
William H. Carter, Jr., Ph.D., *Associate Professor of English*
Morris H. Cohen, Ph.D., *Associate Professor of Government*
Walter H. Crockett, Ph.D., *Associate Professor of Psychology*
James S. Edwards, M.A., *Associate Professor of German*
Henry Frandsen, Ph.D., *Assistant Professor of Mathematics*
Gerald N. Grob, Ph.D., *Associate Professor of American History*

Randall Jarrell, I.H.D., *Professor of English, Womens College of the University of North Carolina*
Bernard Kaplan, Ph.D., *Professor of Psychology*
John F. Kennison, Ph.D., *Assistant Professor of Mathematics*
Frederick W. Killian, LL.B., *Associate Professor of Sociology*
Arthur H. Martin, B.A., *Instructor in English*
Timothy McCarthy, M.A., *Visiting Lecturer, Instructor in History, Brandeis University*
Richard H. McKey, Ph.D., *Assistant Professor of American History, Syracuse University*
John McLaughlin, M.A., *Visiting Lecturer*
Georgene A. Moizuk, M.S., *Graduate Student, University of Massachusetts*
John T. Murphey, B.S., *Visiting Lecturer, Instructor, Worcester Art Museum*
Jacob S. Nakshian, Ph.D., *Visiting Lecturer*
Philip G. Olson, Ph.D., *Associate Professor of Sociology*
Ralph E. Packard, M.A., *Assistant Professor of Educational Psychology*
Spencer Potter, M.A., *Assistant Director of Guidance and Placement*
James F. Powers, M.A., *Visiting Lecturer, Instructor in History, Holy Cross College*
Relly Raffman, A.M., *Associate Professor of Music*
Paul S. Rosenkrantz, Ph.D., *Visiting Lecturer, Assistant Professor of Psychology, Holy Cross College*
Mordecai Rubin, Ph.D., *Assistant Professor of Romance Languages*
Albert J. Sargent, M.B.A., *Lecturer*
Neil R. Schroeder, Ph.D., *Assistant Professor of English*
Dayton D. Shepherd, M.A., *Lecturer in Education and Assistant*
Sang C. Suh, A.M., *Assistant Professor of Economics*
Stanley Sultan, Ph.D., *Associate Professor of English*
Erika E. Theobald, Ph.D., *Assistant Professor of German*
William Vogel, Ph.D., *Visiting Lecturer*
Richard M. Welsh, A.B., LL.B., *Visiting Lecturer*
H. Allen Whartenby, Ph.D., *Assistant Professor of Romance Languages*
Joachim F. Wohlwill, Ph.D., *Associate Professor of Psychology*

Special Programs

NDEA SUMMER INSTITUTE IN AMERICAN HISTORY

Clark University, in cooperation with the United States Office of Education, will conduct a Summer Institute in American History for fifty secondary school teachers (grades 9–12). The Institute, authorized and financed under Title XI, National Defense Education Act as Amended, 1964, will open on June 28, 1965 and continue until August 13, 1965. The deadline for completed applications is April 15, 1965. For further information address all inquiries to:

Dr. Gerald N. Grob, Director
NDEA Summer Institute in American History
Clark University
Worcester, Massachusetts 01610

NDEA SUMMER INSTITUTE IN ENGLISH

Clark University, in cooperation with the United States Office of Education, will conduct a Summer Institute in English for fifty secondary school teachers (grades 9–12). The Institute, authorized and financed under Title XI, National Defense Education Act as Amended, 1964, will open on June 28, 1965 and continue until August 20, 1965. The deadline for completed applications is April 15, 1965. For further information address all inquiries to:

Dr. Stanley Sultan, Director
NDEA Summer Institute in English
Clark University
Worcester, Massachusetts 01610

Course Offerings

Summer, 1965

Intersession

BIOLOGY

TAXONOMIC BOTANY BIO.—S.10

Vernon Ahmadjian, *Associate Professor of Botany*

An introduction to the taxonomy and classification of flowering plants with emphasis on the flora of Worcester County. Field trips will be made to a variety of localities which exhibit different floral patterns. Laboratory work will involve the identification of collected plants and the techniques used in the preservation of plant specimens.

Laboratory fee: $10.00. Monday through Friday, 9:00 a.m. and 2:00 p.m.
Laboratory: To be arranged.

BUSINESS ADMINISTRATION

PRINCIPLES OF ACCOUNTING B.A.—S.117a

Stephen J. Canner, *Research Fellow*

The fundamental accounting equation, the accounting cycle, financial statements and their interpretation. Partnerships and corporation form of business organization will be given limited treatment.

Monday through Friday, 9:00 a.m. and 2:00 p.m.

ECONOMICS

MONEY AND BANKING EC.—S.13

J. Richard Aronson, *Visiting Lecturer*

The principles of money and banking; characteristics of the American monetary and banking system; theoretical relations of money, prices, income.

Monday through Friday, 9:00 a.m. and 2:00 p.m.

ENGLISH

SHAKESPEARE ENG.—S.113

Karl O. E. Anderson, *Professor of English*

A study of ten major plays (comedies, histories, and tragedies), aimed to bring out the development of Shakespeare as a dramatist and to trace the changes in his attitude toward life. The plays to be read are *Romeo and Juliet*, *As You Like It*, *Richard II*, *Henry IV*, *Part I*, *Julius Caesar*, *Hamlet*, *Lear*, *Othello*, *MacBeth*, *and Winter's Tale.* Theater trips to Shakespeare productions will be arranged.

Monday through Friday, 9:00 a.m. and 2:00 p.m.

THE SHORT STORY ENG.—S.125

William H. Carter, Jr., *Associate Professor of English*

This course involves the intensive reading of a wide range of stories which exemplify a variety of fictional methods, affording the student some knowledge of the history of this literary type. The primary aim is to help the student develop an appreciation of the broadly human values implicit in the short story.

Monday through Friday, 9:00 a.m. and 2:00 p.m.

FINE ARTS

INTRODUCTION TO MUSIC F.—F.A.—S.102

Relly I. Raffman, *Associate Professor of Music*

What to listen for in Music. Designed for the student with no previous musical training or experience, it will deal with the basic theoretical elements and materials of music.

Monday through Friday, 9:00 a.m. and 2:00 p.m.

HISTORY

THE COLD WAR HIST.—S.16

Merritt G. Abrash, *Visiting Lecturer*

An analysis of the conflict between the Soviet Union and the United States, from its inception after the Russian Revolution to the present "peaceful co-existence." The lectures and discussions will attempt to clarify the various aspects—ideological, military, and others—of Soviet-American hostility. (This course is interchangeable for credit with Clark's Government 14 (second semester) or its equivalent elsewhere.)

Monday through Friday, 9:00 a.m. and 2:00 p.m.

Languages

FRENCH

ELEMENTARY FRENCH REFRESHER F.—FR.—S.10

Mordecai S. Rubin, *Assistant Professor of Romance Languages*

An intensive three-week course in speaking and reading French, including laboratory work in pronunciation. Classes meet at 8:00 to 8:50, 10:50 to 11:40, 2:00 to 2:50. This course is recommended as a general refresher and is acceptable as a substitute or make-up for the second semester of French 11 at Clark. Auditors are welcome. Limited to 14 students.

Laboratory fee: $10.00. Monday through Friday, 8:00 and 10:50 a.m.; 2:00 p.m.

MATHEMATICS

ELEMENTARY THEORY OF NUMBERS MATH.—S.14

Henry Fransden, *Assistant Professor of Mathematics*

A study of the properties of divisibility, prime numbers, congruences and residues. Prerequisite: Math 12 (calculus).

Monday through Friday, 9:00 a.m. and 2:00 p.m.

POINT-SET TOPOLOGY MATH.—S.18

John F. Kennison, *Assistant Professor of Mathematics*

Set theory, topological spaces, continuous functions and metric spaces. Prerequsite: Math 12 (calculus).

Monday through Friday, 9:00 a.m. and 2:00 p.m.

PSYCHOLOGY

GENERAL PSYCHOLOGY F.—PSY.—S.11a

Walter H. Crockett, *Associate Professor of Psychology*

Introduction to the principles of human behavior.

Monday through Friday, 9:00 a.m. and 2:00 p.m.

PSYCHOLOGY OF LANGUAGE PSY.—S.125

Bernard Kaplan, *Professor of Psychology*

Seminar and independent study pertaining to psychological analysis of the use of symbols in languages, drams, myth, etc. Prerequisite: Permission of the instructor.

Monday through Friday, time to be arranged.

PSYCHOLOGY OF PERSONALITY PSY.—S.172a

Jacob S. Nakshian, *Visiting Lecturer*

A course dealing with the concepts and issues involved in the psychology of personality. Attention will be given to various approaches to the study of personality such as trait theories, typologies, field theory, and psychoanalysis. Methods of appraising personality will also be considered. Prerequisite: General Psychology.

Monday through Friday, 9:00 a.m. and 2:00 p.m.

CULTURE AND PERSONALITY PSY.—S.180

Paul S. Rosenkrantz, *Visiting Lecturer*

An advanced course in which various attempts to integrate the findings of anthropologists and sociologists with the work of personality theorists will be examined.

Monday through Friday, 9:00 a.m. and 2:00 p.m.

SOCIOLOGY

HUMAN EVOLUTION SOC.—S.12a

Philip G. Olson, *Associate Professor of Sociology*

The evolution of man as a biological organism and the development of man's distinguishing feature: culture. The assessment of paleontological and archaeological evidence in an attempt to reconstruct the evolution of man and his culture. The reconstruction of human culture from the stone age to the Neolithic.

Monday through Friday, 9:00 a.m. and 2:00 p.m.

Summer Session

BIOLOGY

INTRODUCTORY BOTANY F.—BIO.—S.11

Georgene A. Moizuk, *Visiting Lecturer*

The structure and life processes of seed plants and the interrelationships between plants, animals and man. Heredity, evolution, and a brief survey of the plant kingdom will be included. Some field trips are planned.

Laboratory fee: $10.00. Monday through Friday, 9:15–10:25 a.m.
Laboratory: To be arranged.

GENERAL ECOLOGY F.—BIO.—S.17

Georgene A. Moizuk, *Visiting Lecturer*

An introductory study of the distribution of plants and animals, their interrelationships and adaptations to such a wide variety of environments as the seashore, sand dunes, woodlands, lakes and streams. Field trips to Mt. Monadnock, the virgin forest at Bradford, N.H., the North Shore, and the Barnstable Dunes on Cape Cod will be taken. Some field work at a freshwater lake will also be undertaken. Previous courses in Biology are helpful but not required.

Laboratory fee: $10.00. Lecture: Monday through Friday, 11:45 a.m.–12:55 p.m.
Laboratory: Two afternoons to be arranged.

BUSINESS ADMINISTRATION

BUSINESS STATISTICS* B.A.—S.16a, b

Albert J. Sargent, *Lecturer*

This course is designed to give the student a knowledge of the basic statistical techniques and procedures as they are applied to business and economic data. Lectures and laboratory exercises.

Monday, Wednesday and Friday, 6:00–10:00 p.m.

*Double course.

PUBLIC SPEAKING F.—B.A.—S.17

James F. Beard, *Professor of English*

For course descriptions see section on English.
(Candidates for the B.S. in B.A. degree should use course No. B.A.—S.17; candidates for the A.B. degree should use the course No. ENG.—S.12.) Limited to 15 students. Blakeslee House.

Monday, Wednesday and Friday, 8:00–9:50 p.m.

CORPORATION FINANCE B.A.—S.18

Frederick E. Bamford, *Assistant Professor of Economics and Business Administration*

A study of the financial structure of modern industry with emphasis on the nature of the business corporation, its financial practices, types of securities, capital structure, financial reorganization, and the problems of internal financial control.

Monday through Friday, 9:15–10:25 a.m.

BUSINESS LAW: UNIFORM COMMERCIAL CODE B.A.—S.21

Richard M. Welsh, *Visiting Lecturer*

A study of the Uniform Commercial Code, particularly as it applies in Massachusetts (Massachusetts General Laws, Chapter 106); sales, commercial paper, bank deposits and collections, letters of credit, bulk transfers warehouse receipts, bills of lading and other documents of title, investment securities, and secured transactions. Evening College students who have taken Business Law should not enter this course.

Monday, Wednesday and Friday, 6:00–7:50 p.m.

BUSINESS LAW: CORPORATION LAW AND ITS EFFECT ON CORPORATE POLICY B.A.—S.22

Richard M. Welsh, *Visiting Lecturer*

A study of the laws pertaining to Corporations, particularly as they apply in Massachusetts; organization, charter, powers, by-laws, stock, stockholders, officers and directors, meetings, books and records, annual reports, merger and consolidation, dividends, bonds and obligations, ownership of real and personal property, criminal offenses, civil suits by and against corporations, employees, state control and officers, types of corporations, and dissolution. Evening College students who have taken Business Law should not enter this course.

Monday, Wednesday and Friday, 8:00–9:50 p.m.

HUMAN RELATIONS IN INDUSTRY B.A.—S.132

Frederick E. Bamford, *Assistant Professor of Economics and Business Administration*

The work consists of the analysis of concrete cases involving the handling of human situations at all levels of activity. Study centers around the development of understanding of the psychological, sociological and economic factors of motivation in industry.

Monday through Friday, 10:30–11:40 a.m.

ECONOMICS

PRINCIPLES OF ECONOMICS* EC.—S.11

Instructor to be announced

An introduction to the fundamental economic principles, together with a study of the practical application of these principles to the problems of American life.

Monday through Friday, 9:15–10:25 a.m. and 2:00–3:10 p.m.

MONEY AND BANKING EC.—S.13

J. Richard Aronson, *Visiting Lecturer*

The principles of money and banking; characteristics of the American monetary and banking system; theoretical relations of money, prices, income.

Tuesday and Thursday, 6:00–8:45 p.m.

INTERNATIONAL ECONOMY: THEORIES AND POLICIES EC.—S.145

Sang C. Suh, *Assistant Professor of Economics*

The course is organized around the following topics: Comparative Advantages and Commercial Policy, Equilibrium in Income and the Balance of Payments, Capital Movements and Foreign Aid, Regional Integration and European Economic Community.

Monday, Wednesday and Friday, 6:00–7:50 p.m.

ECONOMICS OF UNDERDEVELOPED COUNTRIES EC.—S.150

Sang C. Suh, *Assistant Professor of Economics*

Analysis of major characteristics in underdeveloped countries, various theories and policies relating to how development can be started in these countries.

Monday, Wednesday and Friday, 8:00–9:50 p.m.

*Double course. Two classes daily through Summer Session.

EDUCATION

EDUCATIONAL PSYCHOLOGY ED.—S.202

Ralph E. Packard, *Assistant Professor of Educational Psychology*

A study of the teaching-learning process, with emphasis upon principles of learning and personality development of children and adolescents. A background course in the applications of psychology to education. Intended for both in-service and prospective school personnel. Students wishing to concentrate on either adolescent growth and development or child growth and development will be encouraged to do so.

Monday through Friday, 10:30–11:40 a.m.

INTRODUCTION TO GUIDANCE AND COUNSELING IN THE SCHOOLS ED.—S.230

Ralph E. Packard, *Assistant Professor of Educational Psychology*

Principles and practices in the development and operation of a guidance program. Intended for teachers and other school personnel, both prospective and in-service, who desire a systematic introduction to guidance and counseling in the schools.

Tuesdays and Thursdays, 6:00–8:45 p.m.

GUIDANCE AND OTHER PERSONNEL SERVICES IN SCHOOL SUPERVISION AND ADMINISTRATION ED.—S.232

Spencer Potter, *Assistant Director of Guidance and Placement*

A study (1) of the purposes of guidance and other personnel services in meeting emerging school needs, and (2) of the relationships between such services and supervisory and administrative functions. Opportunities will be provided for members of the class to present individual problems for study and discussion.

Monday and Wednesday, 6:00–8:45 p.m.

ELEMENTARY SCHOOL TEACHING—PRINCIPLES AND DEMONSTRATIONS ED.—S.261

Dayton D. Shepherd, *Lecturer in Education*
Mrs. Kay Packard

A course in which modern methods and materials in teaching will be demonstrated with a class of children in the middle grades. A study will be made of the basic principles of teaching with particular emphasis in the social studies and language arts in the elementary school and the correlation of these subjects with other fields. Demonstration will be given in classroom grouping and methods of management, showing the provision for individual differences in teaching and the development of effectiveness of independent study. Double period for 3 weeks, June 28–July 20, 3 semester hours credit.

Monday through Friday, 9:30–11:55 a.m.

ENGLISH

ENGLISH COMPOSITION AND LITERATURE F.—ENG.—S.11b

Arthur H. Martin, *Instructor in English*

This second half of the year course aims to continue the development of correctness and clarity in the student's writing, and to help him develop sound critical principles in evaluating poetry.

Tuesday and Thursday, 6:00–8:45 p.m.

PUBLIC SPEAKING F.—ENG.—S.12

James F. Beard, *Professor of English*

A course in the fundamentals of public speaking, emphasizing both the composition and delivery of the most common types of speeches, such as introductory, expository, and impromptu speeches. Special attention will be given to problems of human relations, voice tests, vocabulary development, and the acquisition of self-confidence, poise, and effective communication techniques. Practice speeches, conference, and voice recordings to enable the student to recognize and correct his speech deficiencies. (Candidates for the B.S. in B.A. degree should use course No. B.A.—S.17; candidates for the A.B. degree should use the course No. ENG.—S.12.) Limited to 15 students.

Blakeslee House. Monday, Wednesday and Friday, 8:00–9:50 p.m.

INTRODUCTION TO POETRY ENG.—S.13

Instructor to be announced

A course introducing the student to a variety of critical approaches to poetry and affording extensive experience in reading, discussing and writing about individual poems. Attention is given to as many as possible of the chief kinds, functions and values of poetry.

Monday through Friday, 8:00–9:10 a.m.

CONTEMPORARY AMERICAN FICTION ENG.—S.106

James F. Beard, *Professor of English*

A critical introduction to the best American fiction since about 1900, with emphasis on its esthetic values, sociological insights, and philosophic implications. Authors read and discussed will include Henry James, Theodore Dreiser, F. Scott Fitzgerald, Sherwood Anderson, Ernest Hemingway, William Faulkner, and others.

Monday, Wednesday and Friday, 6:00–7:50 p.m.

MODERN BRITISH FICTION ENG.—S.143

Instructor to be announced

Representative works of the major British writers of fiction in the twentieth century. Short stories and novels of Joseph Conrad, D. H. Lawrence, E. M. Forster and James Joyce will be studied.

Monday through Friday, 10:30–11:40 a.m.

LITERATURE OF WESTERN CIVILIZATION ENG.—S.150

Erika E. Theobald, *Assistant Professor of German*

A study of literature basic to the cultural development of western civilization; selections will range in subject from mythology to political science, in type from the epic poem to the essay, and in time from Greek antiquity to the Renaissance.

Monday, Wednesday and Friday, 8:00–9:50 p.m.

FINE ARTS

THE APPRECIATION OF PURE VISION IN ART F.—F.A.—S.196

John T. Murphey, *Visiting Lecturer*

The goal of this course is far more than the usual "appreciation" course. It is an intense visual training program. Similar to existing "ear training" courses in the field of music which sharpen, through exercise, the student's response to the subtleties of pure sound, this "eye training" course sharpens response to the intricate pleasures of pure vision in traditional and modern art. The student will do much experimental work in a variety of simple media, analyze composition of many styles and study vision in daily life. The course is geared to absolute beginners but is useful to those already involved in art. Grading is based on conscientious work rather than artistic quality. This course involves essentially the same material as Introduction to Contemporary Art.

Monday, Wednesday and Friday, 8:00–9:50 p.m.

GEOGRAPHY

CARTOGRAPHY AND GRAPHICS* F.—GEO.—S.191

Guy H. Burnham, *Instructor in Geography, Cartography*

A discussion of various graphic methods and their application to geographic data. Since emphasis will be placed upon the mastery of cartographic tools and instruments, this course should prove particularly helpful to those planning to enter government service or to do illustrative work. This course may be taken for double credit by special arrangement with the instructor.
Laboratory fee: $10.00 for double course.

Monday through Friday, 1:30 p.m. and afternoon workshop.

*Double course. Two courses daily through Summer Session.

CARTOGRAPHY AND GRAPHICS* GEO.—S.291

Guy H. Burnham, *Instructor in Geography, Cartography*

Similar course to S.191 with additional work required for graduate credit.
Laboratory fee: $10.00 for double course.

Monday through Friday, 1:30 p.m. and afternoon workshop.

GEOLOGY

PHYSICAL GEOLOGY F.—GEOL.—S.12a

Wesley E. Bryers, *Assistant Professor of Geology*

Introduction to geology, origin of the earth, its development through time; the study of the common minerals and rocks, their structure, origin and occurrence; geological activities of the air, streams, and the sea; nature of glaciers, volcanoes and earthquakes, and the age of the earth. Laboratory work consists of mineral and rock identification. Laboratory: Tuesday, 1:00 p.m.–4:00 p.m.

Monday through Friday, 9:15 a.m.–10:25 a.m.

HISTORICAL GEOLOGY GEOL.—S.12b

Wesley E. Bryers, *Assistant Professor of Geology*

This semester deals with the origin of continents and ocean basins, their development through time; the glacial periods and the antiquity of man; development of surface features of North America; and evolution of life through geologic time. Laboratory work consists of map interpretation and fossil identification. Lectures and laboratory. Laboratory: Thursday, 1:00 p.m.–4:00 p.m.

Monday through Friday, 11:45a.m.–12:55 p.m.

HISTORY

MODERN POLITICAL THEORY HIST.—S.203

Timothy McCarthy, *Visiting Lecturer*

The development of political thought from Maciavelli to the rise of marxian social theory in the 19th century. Special emphasis will be placed on the relationship between political theory and the social framework in which it develops.

Tuesday and Thursday, 6:00–8:45 p.m.

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*Double course. Two courses daily through Summer Session.

TOTALITARIANISM IN GERMANY, 1933–1945 HIST.—S.208a

Daniel R. Borg, *Assistant Professor of History*

A seminar on the origins, ideology and operation of the Nazi regime.

Monday and Thursday, 7:00–9:45 p.m.

RENAISSANCE AND REFORMATION HIST.—S.285

James F. Powers, *Visiting Lecturer*

A survey of the transition from the middle ages to the modern era in the West, emphasizing political, intellectual and cultural activity in this age of change and discovery.

Monday through Friday, 8:00–9:10 a.m.

THE FRENCH REVOLUTION HIST.—S.286

James F. Powers, *Visiting Lecturer*

An examination of the origins, outbreak and development of this great upheaval, commencing with the age of the Enlightenment and concluding with the dictatorship of Napoleon Bonaparte.

Monday through Friday, 9:15–10:25 a.m.

Languages

FRENCH

INTERMEDIATE FRENCH* F.—FR.—S.12

H. Allen Whartenby, *Assistant Professor of Romance Languages*

This course aims to develop the fundamental skills of pronunciation, conversation, grammar, reading. The approach will be conversational but will include carefully graded readings and laboratory work. Open to students who have had a first-year college course or the equivalent. Indivisible double course.
Laboratory fee: $20.00.

Monday through Friday, 9:15–10:25 a.m. and 2:00–3:10 p.m.

READINGS IN FRENCH LITERATURE* F.—FR.—S.14

Instructor to be announced

A third-year course, designed first to perfect the student's techniques of reading, and second to give an understanding of a number of French works of universal importance and appeal. Open to students who have had a second-year college French course or the equivalent.

Monday through Friday, 9:15–10:25 a.m. and 2:00–3:10 p.m.

*Double course. Two classes daily through Summer Session.

GERMAN

INTRODUCTORY GERMAN* F.—GER.—S.11

Karl J. R. Arndt, *Professor of German*

A complete first year college course in German which will make extensive use of modern language teaching aids. Aural-oral practice. Early in the course the student will be introduced to a series of graded readers, which must be mastered by the end of the course and which are designed to prepare him for independent reading of German newspapers and journals. The course will demand the full time and attention of those interested.

Monday through Friday, 8:00–9:10 a.m. and 11:30 a.m.–12:45 p.m.

INTERMEDIATE GERMAN* F.—GER.—S.12

James S. Edwards, *Associate Professor of German*

Review of grammar, translation from and into German, rapid reading of modern German prose. An intensive course covering the material of the regular second year of college German. The course will demand the full time and attention of those interested. Laboratory optional.

Monday through Friday, 9:15–10:25 a.m. and 2:00–3:10 p.m.

SPANISH

INTRODUCTORY SPANISH* S.—SP.—S.11

Raymond E. Barbera, *Associate Professor of Romance Languages*

For beginners. The elements of grammar and pronunciation; carefully graded reading; exercises in speaking and writing.
Laboratory fee: $20.00.

Monday through Friday, 8:00–9:10 a.m. and 2:00–3:10 p.m.

MATHEMATICS

FUNDAMENTALS OF MATHEMATICS* F.—MATH.—S.11

Instructor to be announced

Elementary study of mathematical logic, postulational systems, algebra, point sets, analytic geometry, the concept of function, trigonometric functions, natural numbers, cardinal numbers, the concept of limit, and some brief attention to elementary probability and statistical inference.

Monday through Friday, 9:15–10:25 a.m. and 2:00–3:10 p.m.

*Double course. Two classes daily through Summer Session.

CALCULUS* MATH.—S.12

Instructor to be announced

Introduction to differential and integral calculus; essential for further study in mathematics as well as for the study of applications in the natural and social sciences.

Monday through Friday, 9:15–10:25 a.m. and 2:00–3:10 p.m.

INTERMEDIATE CALCULUS* MATH.—S.13

Instructor to be announced

Geometric and physical applications of integration, sequences and series, three-dimensional analytic geometry, partial differentiation, multiple integrals, and a brief introduction to differential equations. Prerequisite: Math. 12.

Monday through Friday, 9:15–10:25 a.m. and 2:00–3:10 p.m.

INTRODUCTION TO LINEAR ALGEBRA AND ANALYSIS*

MATH.—S.113

Instructor to be announced

First semester: mathematical induction, matrices, determinants, vector spaces, Euclidean vector spaces and quadratic forms. Second semester: the real number system, sequences, limits of functions, continuity, uniform continuity, differentiability and elements of point-set topology. Prerequisite: Math 12 or the permission of the instructor.

Monday through Friday, 9:15–10:25 a.m. and 2:00–3:10 p.m.

PSYCHOLOGY

GENERAL PSYCHOLOGY PSY.—S.11b

William Vogel, *Lecturer*

The second half of the General Psychology course, begun in the Intersession.

Monday and Thursday, 7:00–9:45 p.m.

ABNORMAL PERSONALITY PSY.—S.103b

Jacob S. Nakshian, *Visiting Lecturer*

A survey of the forms of abnormal behavior and theories of abnormality. Prerequisites: General Psychology and Psychology of Personality.

Monday through Friday, 9:15–10:25 a.m.

*Double course. Two classes daily through Summer Session.

INTRODUCTION TO CHILD PSYCHOLOGY PSY.—S.150

Joachim F. Wohlwill, *Associate Professor of Psychology*

This course will consider the normal process of development of the child from infancy up to adolescence, with emphasis on perception, thinking, emotion, and social behavior.

Monday through Friday, 10:30–11:40 a.m.

SOCIAL PSYCHOLOGY PSY.—S.170a

Walter H. Crockett, *Associate Professor of Psychology*

The role of social factors in the behavior of individuals and of groups. Among the topics to be discussed are attitudes, rumor, prejudice, leadership and public opinion polls.

Monday through Friday, 8:00–9:10 a.m.

HISTORY OF PSYCHOLOGY PSY.—S.206

Bernard Kaplan, *Professor of Psychology*

Contemporary problems and theories in psychology are viewed in the light of philosophical and scientific antecedents. Attention will be given to the historical development of present-day Behavioristic, Gestalt, Phenomenological and Psychoanalytic viewpoints in psychology.

Monday and Thursday, 7:00–9:45 p.m.

SOCIOLOGY

PRINCIPLES OF SOCIOLOGY SOC.—S.11a

Frederick W. Killian, *Associate Professor of Sociology*

An introduction to the basic concepts and theories of sociology and their application to an analysis of American society.

Monday through Friday, 10:30–11:40 a.m.

SOCIAL ANTHROPOLOGY SOC.—S.12b

Philip G. Olson, *Associate Professor of Sociology*

An analysis of primitive society with emphasis on social structure, including religion, kinship and economics. The relation between culture and personality and the processes of social change in the primitive world are explored.

Tuesday and Thursday, 6:00–8:45 p.m.

SOCIAL PROBLEMS AND THEIR ANALYSIS SOC.—S.16

Frederick W. Killian, *Associate Professor of Sociology*

This course deals with problem analysis, social change and theories thereof. Emphasis will be placed on institutional theory as related to selected problems in criminology, law and politics.

This will be an independent study course, with some release time from lectures to prepare for class reports oral and written concerning problems selected by students (with approval)—urban problems, segregation problems, religious problems and educational problems.

Monday through Friday, 11:45–12:55 p.m.

COURSE SCHEDULE

INTERSESSION—JUNE 7–JUNE 26—All classes meet twice a day 9:00 a.m. and 2:00 p.m., except Elementary French Refresher (8:00, 10:50 a.m. and 2:00 p.m.).

B.A. —S.117a	Principles of Accounting	Canner
Bio. —S.10	Taxonomic Botany	Ahmadjian
Ec. —S.13	Money and Banking	Aronson
Eng. —S.113	Shakespeare	Anderson
Eng. —S.125	The Short Story	Carter
F.A. —S.10a	Introduction to Music	Raffman
Fr. —S.10	Elementary French Refresher	Rubin
Hist. —S.16	The Cold War	Abrash
Math.—S.14	Elementary Theory of Numbers	Frandsen
Math.—S.18	Point-Set Topology	Kennison
Psy. —S.125	Psychology of Language	Kaplan
Psy. —S.11a	General Psychology	Crockett
Psy. —S.172a	Psychology of Personality	Nakshian
Psy. —S.180	Culture and Personality	Rosenkrantz
Soc. —S.12a	Human Evolution	Olson

SPECIAL PROGRAMS—NDEA Summer Institute in American History—June 28–August 13 (Grob, Billias, Campbell, Cohen, McKey, and Olson)

NDEA Summer Institute in English—June 28–August 20 (Sultan, Blinderman, Schroeder, McLaughlin, and Jarrell)

SUMMER SESSION—(Day Classes)—JUNE 28–AUGUST 14

8:00–9:10 a.m. Monday through Friday

Eng. —S.13	Introduction to Poetry	To be announced
Hist. —S.285	Renaissance and Reformation	Powers
Psy. —S.170a	Social Psychology	Crockett

9:15–10:25 a.m. Monday through Friday

B.A. —S.18	Corporation Finance	Bamford
Bio. —S.11	Introductory Botany	Moizuk
Geol. —S.12a	Physical Geology	Bryers
Hist. —S.286	The French Revolution	Powers
Psy. —S.103b	Abnormal Personality	Nakshian

9:30–11:55 a.m. Monday through Friday, June 28–July 20

Ed. —S.261	Elementary School Teaching—Principles and Demonstrations	Shepherd Packard

10:30–11:40 a.m. Monday through Friday

B.A. —S.132	Human Relations in Industry	Bamford
Ed. —S.202	Educational Psychology	Packard
Eng. —S.143	Modern British Fiction	To be announced
Psy. —S.150	Introduction to Child Psychology	Wohlwill
Soc. —S.11a	Principles of Sociology	Killian

11:45–12:55 p.m. Monday through Friday

Geol. —S.12b	Historical Geology	Bryers
Bio. —S.17	General Ecology	Moizuk
Soc. —S.16	Social Problems and Their Analysis	Killian

1:30 p.m. Monday through Friday

Geo.	—S.191	Cartography and Graphics	Burnham
Geo.	—S.291	Cartography and Graphics	Burnham

Double Courses

8:00–9:10 a.m. and 11:30 a.m.–12:45 p.m. Monday through Friday

Ger.	—S.11	Introductory German	Arndt

8:00–9:10 a.m. and 2:00–3:10 p.m. Monday through Friday

Sp.	—S.11	Introductory Spanish	Barbera

9:15 a.m. and 2:00 p.m. Monday through Friday

Ec.	—S.11	Principles of Economics	To be announced
Fr.	—S.12	Intermediate French	Whartenby
Fr.	—S.14	Readings in French Literature	To be announced
Ger.	—S.12	Intermediate German	Edwards
Math.	—S.11	Fundamentals of Mathematics	To be announced
Math.	—S.12	Calculus	To be announced
Math.	—S.13	Intermediate Calculus	To be announced
Math.	—S.113	Introduction to Linear Algebra and Analysis	To be announced

SUMMER SESSION—(Evening Classes)—JUNE 28–AUGUST 14

6:00–7:50 p.m. Monday, Wednesday and Friday

B.A.	—S.21	Business Law: Uniform Commercial Code	Welsh
Ec.	—S.145	International Economy: Theories and Policies	Suh
Eng.	—S.106	Contemporary American Fiction	Beard

6:00–10:00 p.m. Monday, Wednesday and Friday

BA.	—S.16a, b	Business Statistics	Sargent

6:00–8:45 p.m. Monday and Wednesday

Ed.	—S.232	Guidance and Other Personnel Service in School Supervision and Administration	Potter

6:00–8:45 p.m. Tuesday and Thursday

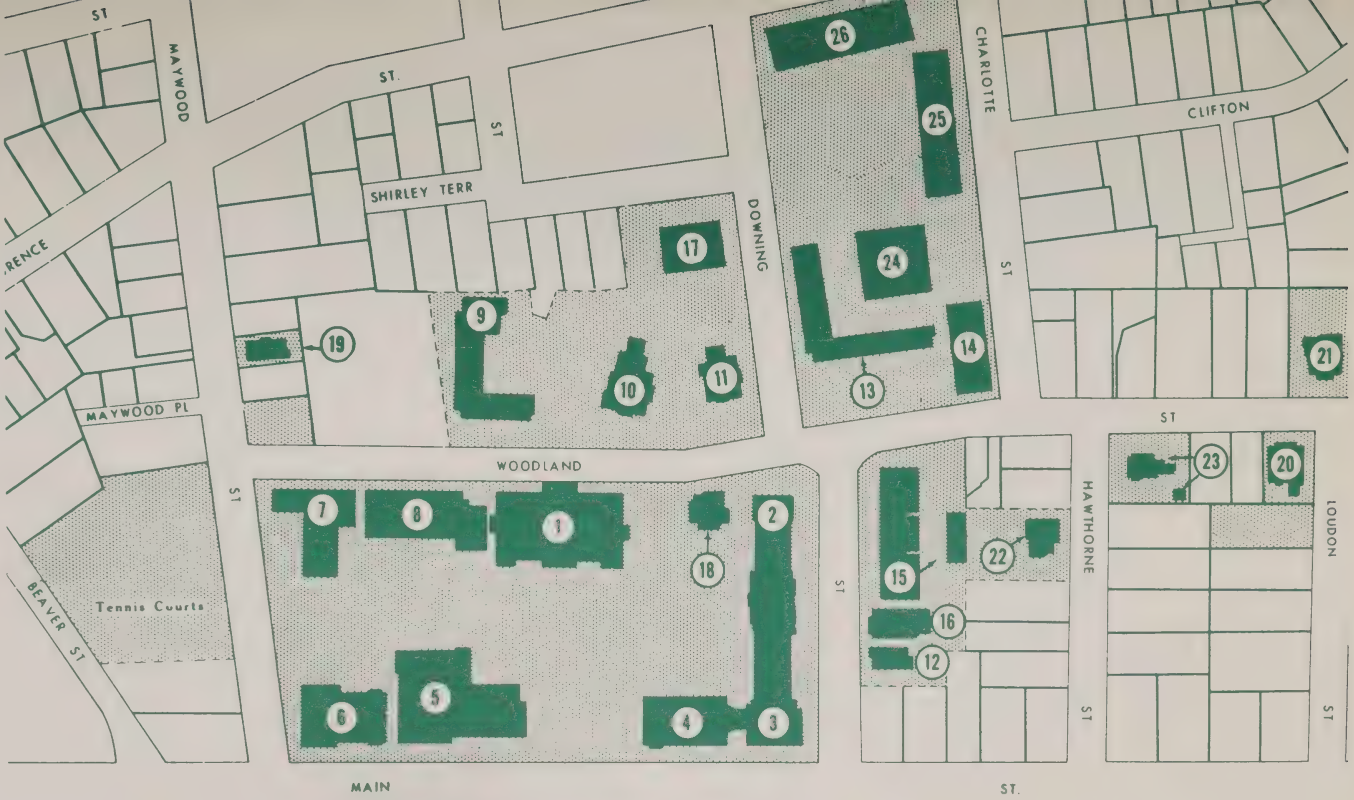
Ec.	—S.13	Money and Banking	Aronson
Ed.	—S.230	Introduction to Guidance and Counseling in the Schools	Packard
Eng.	—S.11b	English Composition and Literature	Martin
Hist.	—S.203	Modern Political Theory	McCarthy
Soc.	—S.12b	Social Anthropology	Olson

7:00–9:45 p.m. Monday and Thursday

Hist.	—S.208a	Totalitarianism in Germany, 1933–1945	Borg
Psy.	—S.11b	General Psychology	Vogel
Psy.	—S.206	History of Psychology	Kaplan

8:00–9:50 p.m. Monday, Wednesday and Friday

BA.	—S.22	Business Law: Corporation Law and its Effect on Corporate Policy	Welsh
Ec.	—S.150	Economics of Underdeveloped Countries	Suh
Eng.	—S.17	Public Speaking (also B.A. S.17)	Beard
Eng.	—S.150	Literature of Western Civilization	Theobald
F.A.	—S.196	The Appreciation of Pure Vision in Art	Murphey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